# AN EVALUATION OF DESIGN FOR SOCIABILITY IN THE URBAN WATERFRONT CONTEXT:

## A CASE STUDY OF THE BALTIMORE INNER HARBOR

by

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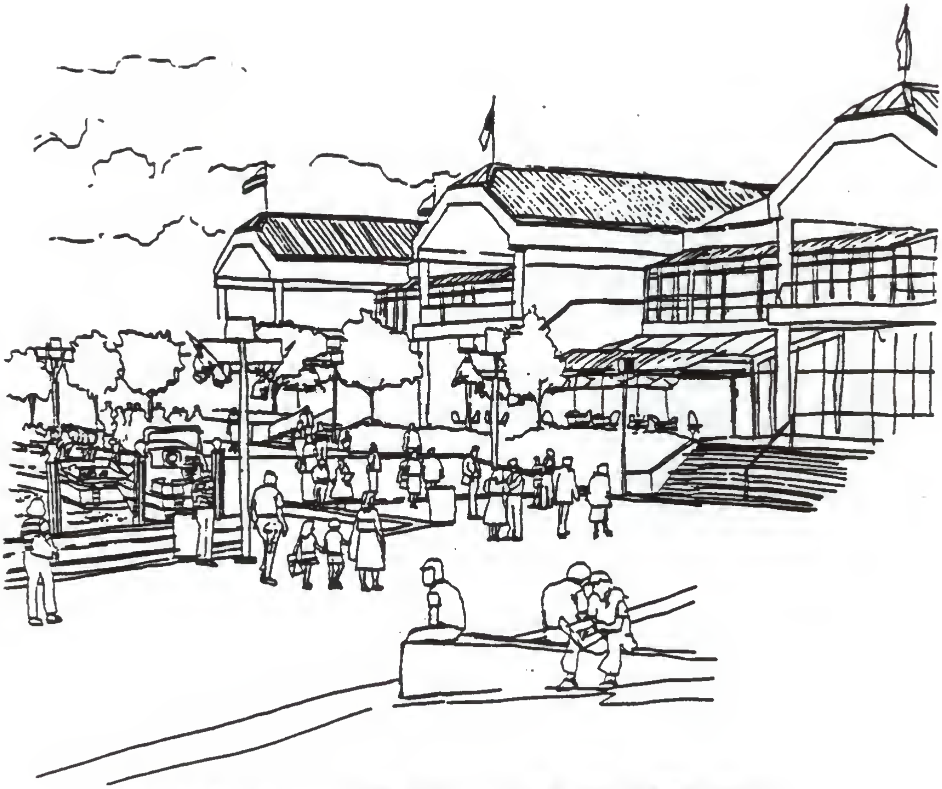

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BRENDA JOSEPHINE OCANDO

1988

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ABSTRACT

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# AN EVALUATION OF DESIGN FOR SOCIABILITY IN THE URBAN WATERFRONT CONTEXT:

## A CASE STUDY OF THE BALTIMORE INNER HARBOR

# CHAPTER I INTRODUCTION

***************************************

## Urban Waterfronts Today

Today, the urban waterfront is a place offering a wide range of public recreation opportunities, where people can come to shop, eat, relax, and be entertained. From coast to coast, Americans are rediscovering the beauty and usefulness of the urban waterfront (Honore and Jaffeson, 1980). The urban waterfront can be defined as a development that lies along the edge of a water body with a formal and aesthetic response to the surrounding urban environment. Urban designers such as Joseph Brown, principal-in-charge for EDAW, believe landscape architects add comprehensiveness to the urban design process because they work with people and nature (Shirvani, 1983). There are two types of urban waterfront projects -- first, those designed to satisfy community recreation needs; and second, those with a mixed-use development that relates to the recreation and heritage of the waterfront area (Heritage Conservation, 1980).

For the purposes of this study, this research deals with a mixed-use development project, the Baltimore Inner Harbor (Figure 1.1 and 1.2). The Inner Harbor is a large area, therefore this study centers on two study areas, two urban open space areas between the Harborplace pavilions and the water's edge (Figure 1.3). To define this study in greater detail, it is necessary to understand the scope of the study.

Figure 1.1

Regional Context Map of Baltimore, Maryland

and Other Festival Waterfronts by the same Developer

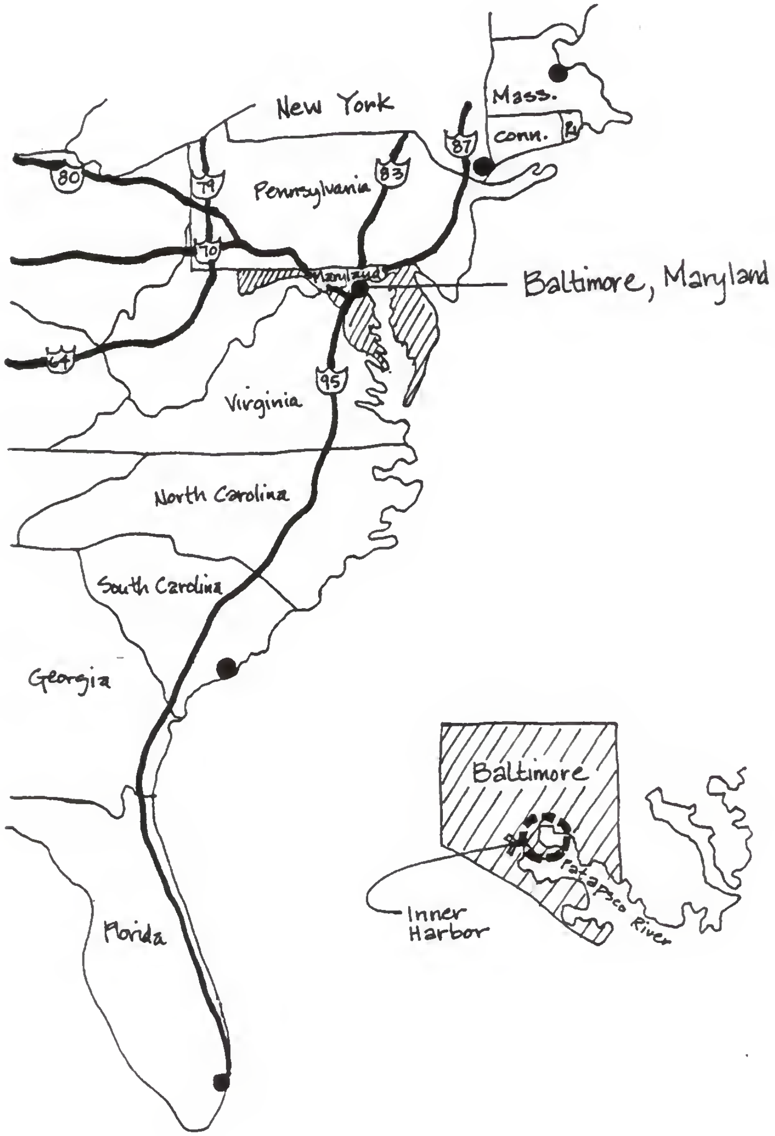


Figure 1.2

Baltimore Metropolitan Map

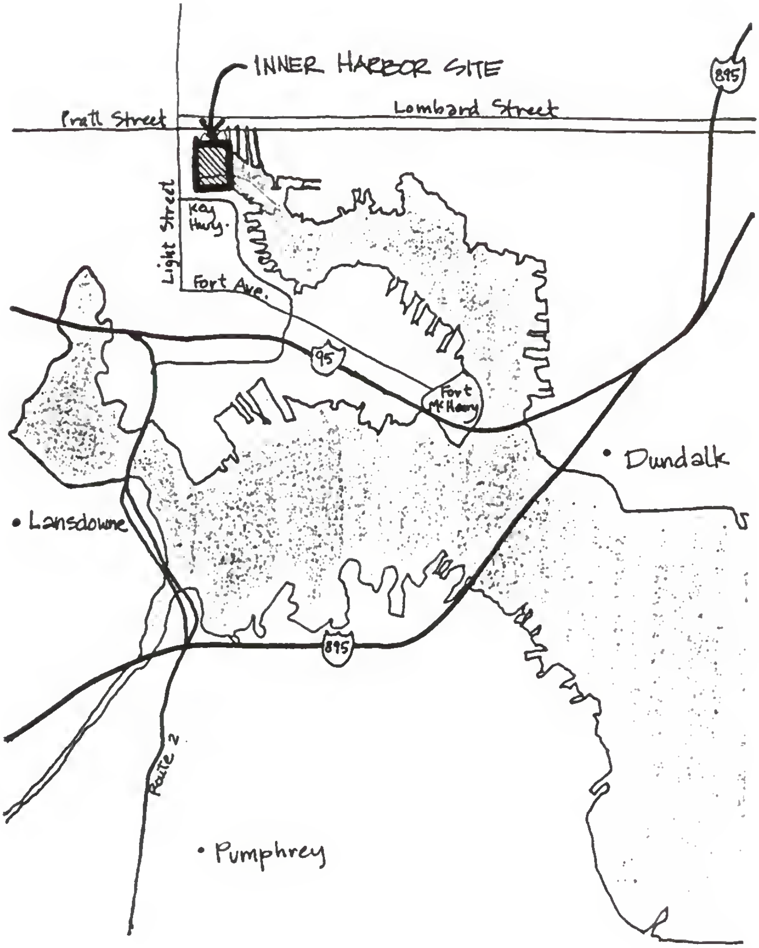
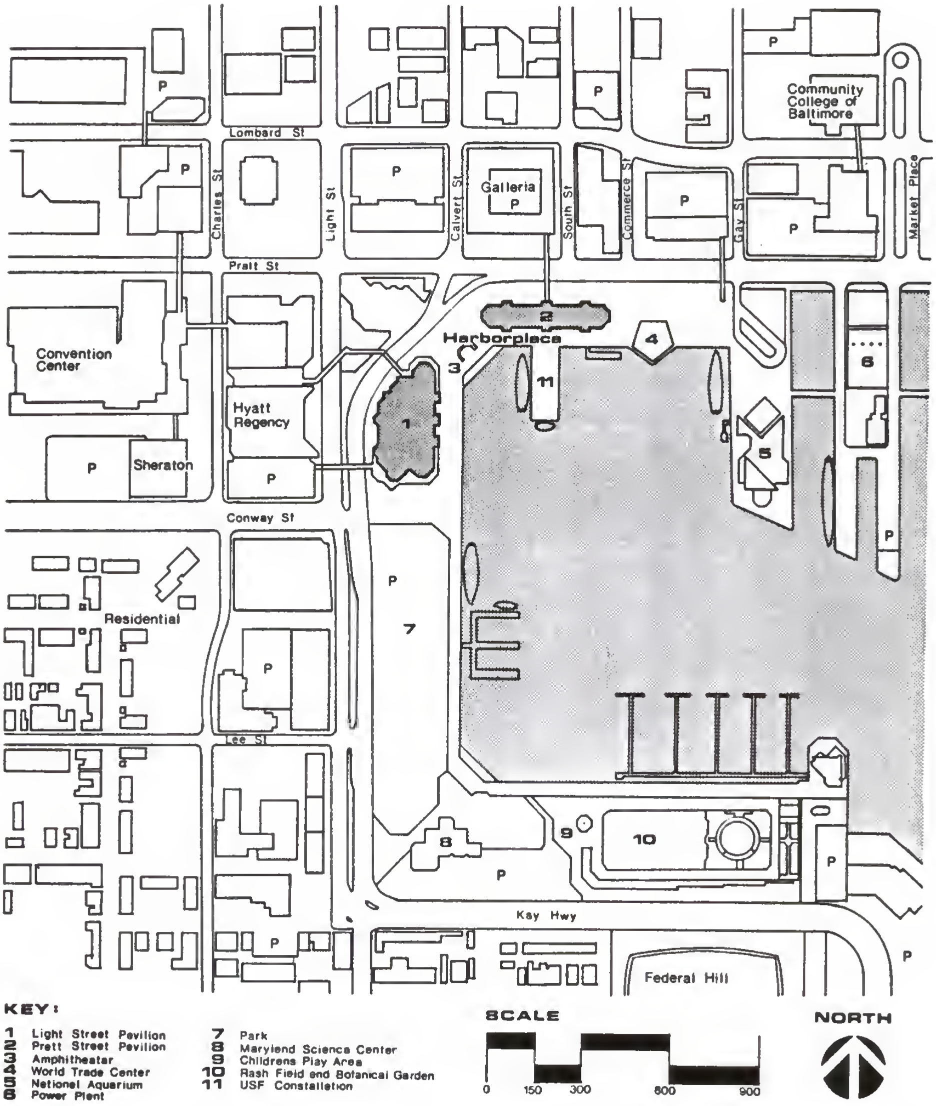


Figure 1.3

Baltimore Inner Harbor Site Map

and Harbor Attractions



## Scope of Study

This study addresses the application of William Whyte's theory for successful social urban space to Harborplace. Harborplace was selected as a study site because it is a waterfront project that has been fully documented. This study does not deal with the political, legal or economic design issues; but rather evaluates the sociability within its urban space. By sociability I mean, the life within a space, the activity of people in that space -- in groups or as individuals; people coming together. Whyte's (1980b) research identifies four design criteria that are critical for successful social space which have been adapted for this study. These are: 1) location of plaza, 2) street-plaza relationship, 3) sittability, and 4) other factors such as sun, wind, trees, water, and food.

As previously stated, the emphasis of this study centers on two study areas between the buildings and water's edge of Harborplace. Study Area 1 is located near the Light Street Pavilion, and Study Area 2 is located near the Pratt Street Pavilion (**Figures 1.4 and 1.5**). These two study areas were chosen because they are highly active pedestrian areas, social spaces, successful designs, and are the hub of Harborplace. In order to understand these two spaces more clearly, it is helpful to have an overview of the history of Harborplace.

Figure 1.4

Overview of the Two Study Areas

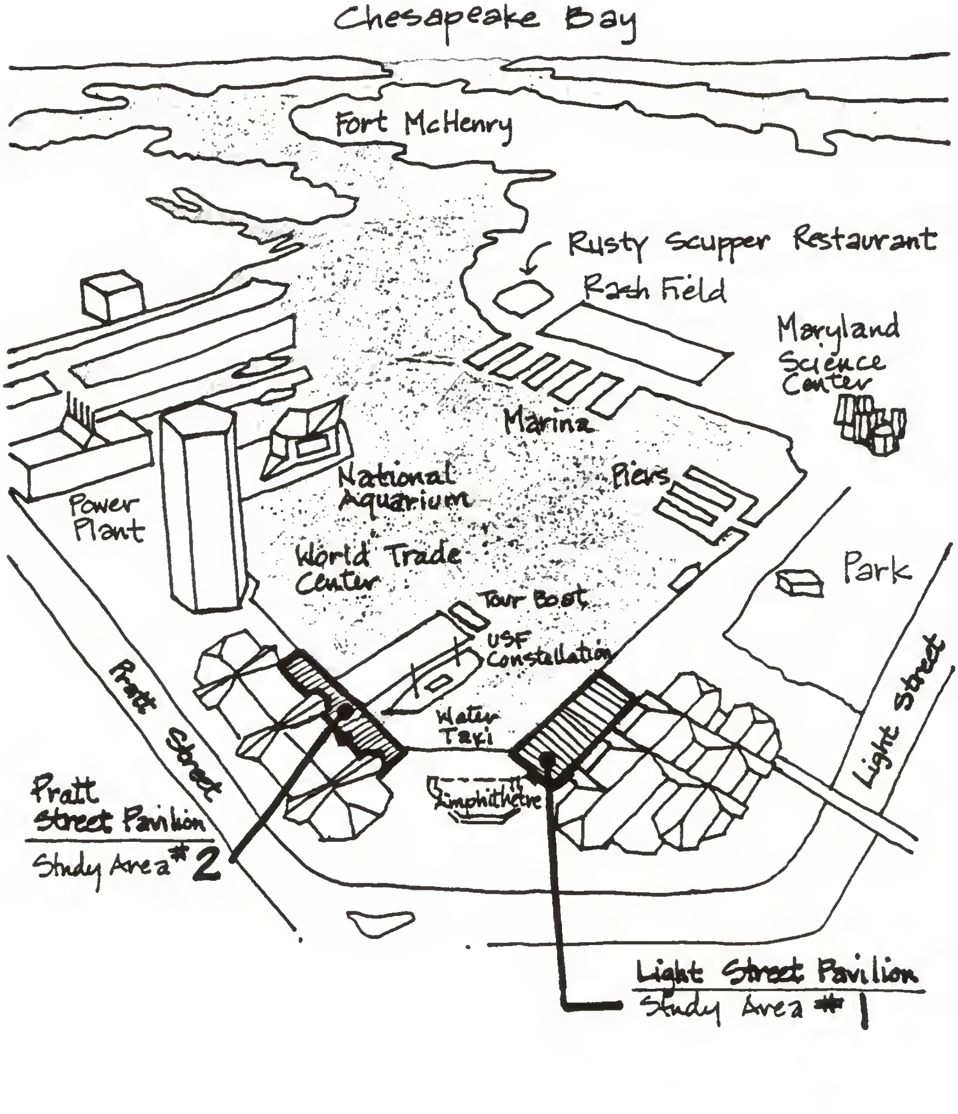
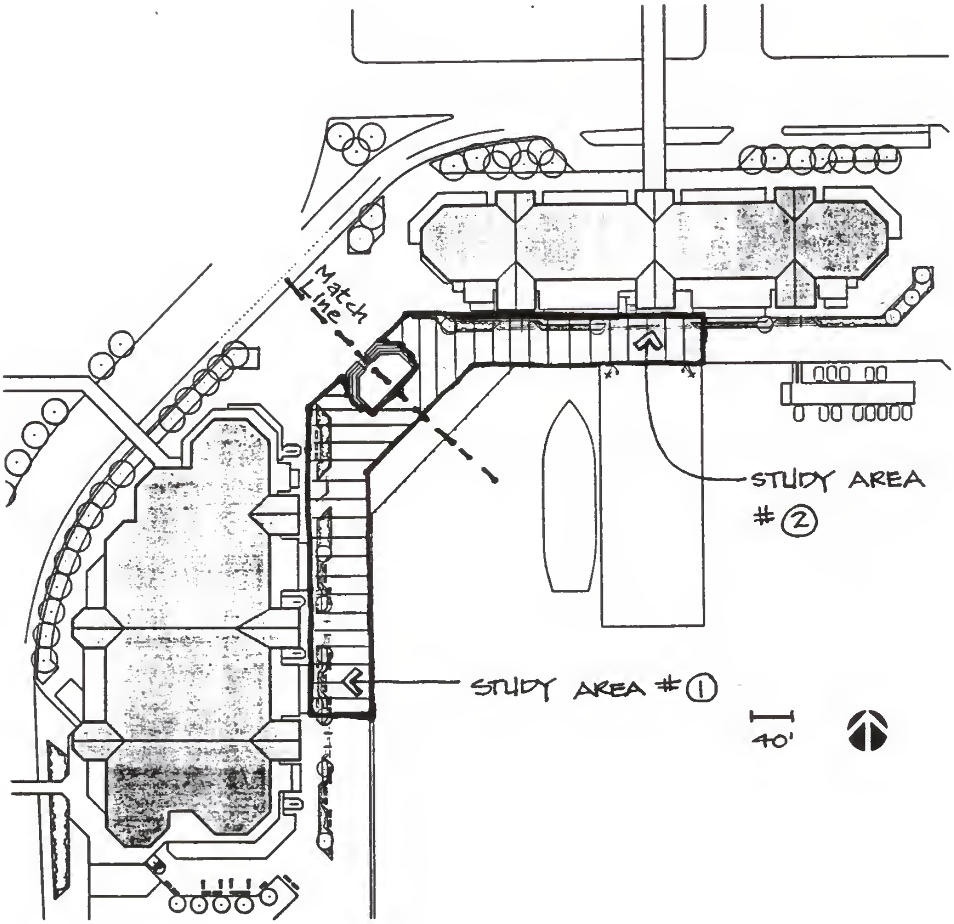


Figure 1.5

Selected Study Sites, Baltimore's Harborplace



## Overview of Baltimore's Harborplace

The history of Baltimore's Harborplace begins with the founding of the City of Baltimore along the shores of the Patapsco River in 1729. This area became a major center of maritime commerce and was surrounded by many waterfront trading piers (Charles Center Inner Harbor Management [CCIHM], 1987). The Light Street and Pratt Street pier, where the Harborplace pavilions now sit, was used for unloading vegetables, seafood, and passengers from nearby nautical originations. The hustle and bustle surrounding the life of the waterfront piers created a lively environment in which to be part of (Heritage Conservation, 1980). The activity associated with these waterfront piers portrayed an aroma and excitement that was never forgotten by native Baltimoreans (Keith, 1982). In the early 1900's Baltimore's waterfront was abandoned due to the introduction of mass transit, and growth of the central business district away from the city. Keith (1982) states that today the rat-infested wharves of the Inner Harbor's steamboat days have been transformed into one of the most attractive public gathering places on the East Coast.

Baltimore's Harborplace was built in 1980, and has become a place that has won national acclaim. CCIHM (1987) reports that the Inner Harbor is currently redeveloping 240 acres surrounding the harbor in order to create a dramatic gateway to the Central Business District. This development follows a master plan drawn in 1963 by the Philadelphia firm of Wallace, McHarg, Roberts, and Todd. The firm's concept was to return the shoreline to the public. Instead of cutting the water off from the city, prime consideration was given to providing land on the water's edge. Today, this edge is used for leisure-time enjoyment, e.g., recreational, educational, and cultural activities.

The central business district (CBD) surrounding the study site contains a Metro Center, a subway that extends north to the Penn Central Train Station, south to the residential Federal Hill area, east to the Jones Falls Expressway, and west to the Lexington Market and University of Maryland neighborhoods. This CBD is comprised of twelve urban renewal areas, two university campuses and other institutions, two historic districts, local and state office complexes and about 10,000 residents and 120,000 employees (Ray, 1987).

The Baltimore Inner Harbor study area is also surrounded by a variety of other uses including The Baltimore Convention Center, Lexington Marketplace, theaters, fine arts centers, hotels, a library, a galleria, and a festival hall. The study site consists of a promenade that leads around the edge of the harbor to a number of attractions (Figure 1.3) The Inner Harbor is an expansive site that can be divided for study. It is pertinent to give an overview of the two study areas. This will provide a better understanding of the relationship between the two selected study areas.

## Overview of the Two Study Areas

Harborplace is an open space that is surrounded by two pavilions which are primarily used for eating and shopping. Study area 1 and study area 2 are located between the buildings and water's edge of Light Street and Pratt Street Pavilions (see **Figures 1.4 and 1.5**). Through prior observation of the study site it was noted that these areas were popular social areas. In general, Harborplace draws a high concentration of people, with study area 1 appearing to have a higher percentage of social space. To clarify the reasons why, it is critical to understand the similarities between the study areas. The two study areas resemble each other in a variety of aspects. They are parallel in size, shape, landscape, hardscape, seating, circulation, and function. It is important to consider each of these similarities in detail.

## Similarities

Each of the study areas are relatively the same size and measure approximately 19,000 square feet in area. The dimensions are 320 feet in length and between 32-40 feet in width. The linear shape parallels the edge of the water defining the outside parameters of the two study areas. Both areas contain a landscape border consisting of flowering trees and evergreen shrubs. A continual band of brick pavement extends from one space to the other creating a type of visual link between the two spaces providing a natural transition between the two study areas.

Seating such as ledges, planter edges, benches, and steps provide a variety of seating choices for the users and are located on both sites. Pedestrian circulation patterns are very similar in both areas and are accessed by skywalks and the promenade, a boardwalk. In terms of function, both areas are used for daytime and nighttime activities and entertainment, providing such activities as eating, drinking and shopping. There are strong similarities between these two study areas but, they are not identical. Through closer observation, it is presumable that there is a range of differences within each category.

The areas vary in size, shape, landscape, hardscape, seating, circulation, and g) function. It is important to understand these differences in detail in order to clarify the various amounts and kinds of usage within each study area.

## Differences

Study Area 1 is approximately eight feet larger creating additional space allowing for more people. Due to the slight increase in size, study area 1 has a plaza-like rectilinear shape providing more space for sociability. There are more trees in study area 1 providing more shade for the users and a cooler environment in which to sit and rest. Study area 1 has more ledge space on the water's edge in which to sit. Study area 2 is limited in this respect because of high tide. Study area 1 has more variety of seating at different levels attracting more users because one is offered different types of seating choices, eg: places to sit, people to sit next to or, to just simply sit alone.

There are two skywalks which provide pedestrian access into study area 1. These skywalks serve as major links to nearby hotels and office buildings. The promenade, a linear boardwalk link (see Figures 1.4 and 1.5) in study area 1 is mostly level, whereas area 2 has a hierarchy of different levels. In terms of function, the pavilions located near the two study areas serve different levels of activities. The Light Street Pavilion in study area 1 consists mainly of a fast food court, restaurants, small retail specialty shops and a marketplace. The Prátt Street Pavilion near study area 2 contains restaurants and clothes shops, drawing an older age group due to the amenities within the pavilion. The advantages of study area 1 over study area 2 will be discussed in greater detail in Chapter IV which provides "Analysis and Findings".

## Objectives of the Study

The primary objective of this study is to determine how William Whyte's criteria can be extended by using questionnaires to supplement Whyte's observation technique, in order to evaluate the design of social space within the urban waterfront. Through concluding design recommendations and guidelines for sociability, this objective will help to further improve the design of the two study areas within Baltimore's Harborplace. As previously mentioned, this research analyzes two areas of the Harborplace study site by applying Whyte's four design criteria of social space and also considers how additional criteria unique to waterfronts might be important in the two spaces. Farbstein & Kantrowitz (1978) suggest that in order to judge an urban open space a success, a set of criteria in which to measure by are necessary. In order to provide insight as to why parts of the two study areas work socially and why parts don't, several hypotheses may be suggested:

1) Study Area 1 may work better than Study Area 2 based on William Whyte's design criteria for social urban space.

2) Qualities unique to each study area may indicate areas of social urban space that reinforce Whyte's argument, as well as lead to areas of social space his argument did not predict, since none of his study areas included waterfronts.

## Overview of Methodology

An interview questionnaire method was used to research these objectives and hypotheses. The overall objective was to try to draw final conclusions from the two study area's pertaining to social urban space in order to produce a stronger social design solution by critiquing weak elements of design. Two smaller areas were chosen for study because these two areas showed parallel similarities but contained varying differences within each particular area. After the study areas were identified, a typical weekend use was studied. This is when the two study areas are the busiest, therefore giving a better picture of the typical plaza use. Participants were given a questionnaire interview pertaining to the study site. The responses from the questionnaire were then entered in a reflex data base computer program, and results were tabulated according to the number and percentage of responses to each answer. The results were then analyzed and conclusions were drawn. A more detailed description of the methodology process can be found in Chapter III. It is important to consider why this research study was chosen for investigation.

## Importance of Study

There is a very small body of literature that deals specifically with urban waterfront design in relation to social urban space. The social space of urban waterfront design, identified in this study, is important to the designer, developer, and user.

The designer can benefit by gaining insight to better understand design of urban waterfront spaces. It is essential for the designer to have a current knowledge of the needs, preferences, and expectations of the people who will use these urban waterfronts. This knowledge could assist the designer in providing solutions that will improve the quality of life for the user. Having a better knowledge of what is important and what is not important to the user, will allow the designer to have a sound base for decision-making and would result in better use of public space for urban waterfront projects.

# CHAPTER II LITERATURE REVIEW

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The literature pertaining to urban space as open space is extensive, but sources specifically addressing the urban waterfront as open space are fewer. For this study, it is important to know background that deals with the urban waterfront as open space, research of sociability related to the design of urban open space, and an overview of the issues related to urban waterfront design.

## History of the Urban Waterfront

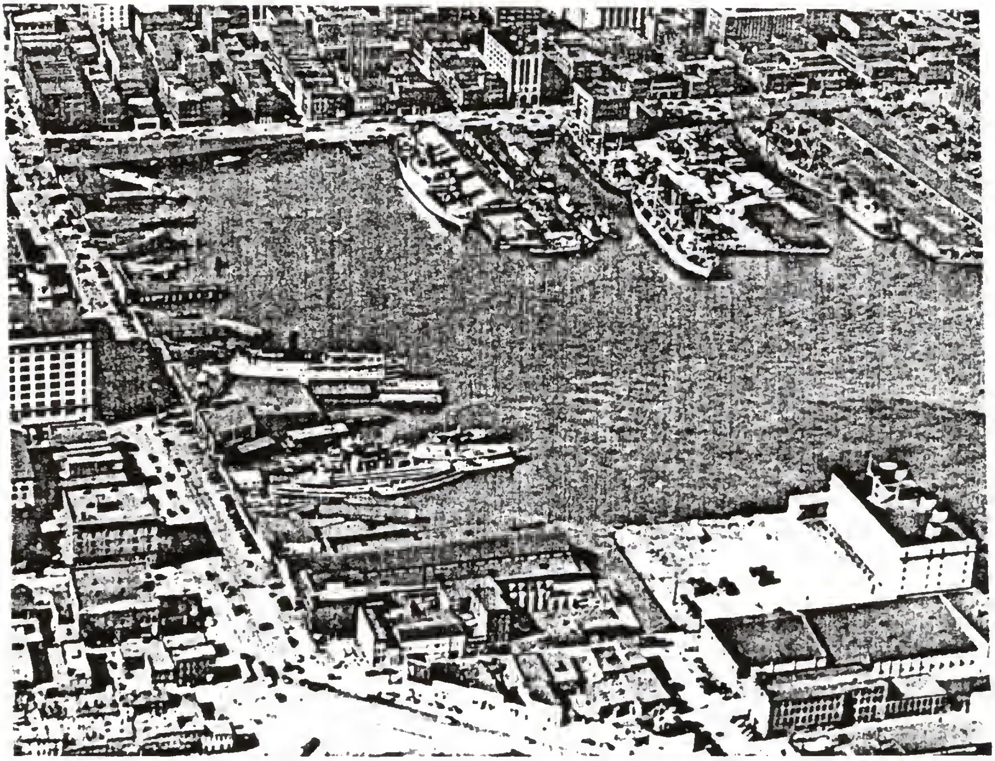
Since the term urban waterfront implies change to urbanism, an overview of the history of the waterfront as open space is necessary. The term urban waterfront as defined by Wrenn (1983) can be considered as the interface between land and water. He states that the function of urban waterfronts has always been tied to the characteristics and needs of individual cities and has shared a typical sequence of historical development. Cities were born and communities began at the mouth of navigable rivers, lakes, bays and oceans (Spink, 1983). A city's waterfront supported the immediate residential population with trades of commerce, shipbuilding, and transportation leaving recreation use as a secondary function (Wrenn, 1983). The open space of the waterfront which was recreational was primarily used by local citizens for health and leisure needs. However, waterfronts gradually declined due to the introduction of the train and later the truck (Harney, 1987), shifting the growth of the central business district (CBD) away from the city

(Keith, 1982). This shift, as suggested by Wren (1983) influenced the use of the waterfront and therefore, waterfronts were abandoned.

Gradually, as the scarcity of land caused abandoned waterfronts to be appreciated for their economic and recreational open space value, many cities..."urgently needing to improve their image as a good place to live, work and visit, have taken a fresh look at their waterfronts and realized that they are special places" (Heritage Conservation, 1980). As a result, the lure that originally brought people to the waterfront was once again persuading the public to use the urban waterfront as an open space amenity, thereby supporting the social life of the urban waterfront (see **Figure 2.1** and **2.2**). Wylson (1986, p.58) states land no longer needed for maritime purposes is currently being converted to urban open space providing a place for water-oriented public recreation. Urban Waterfronts as open space provide infinite pleasures, they add excitement as well as serenity, definition as well as a sense of space and a place for recreation (Eckart, 1981 and Honore & Jaffeson, 1980). With the changing use of the waterfront into a social urban space, it is important to understand and explore the literature related to sociability and urban open space.

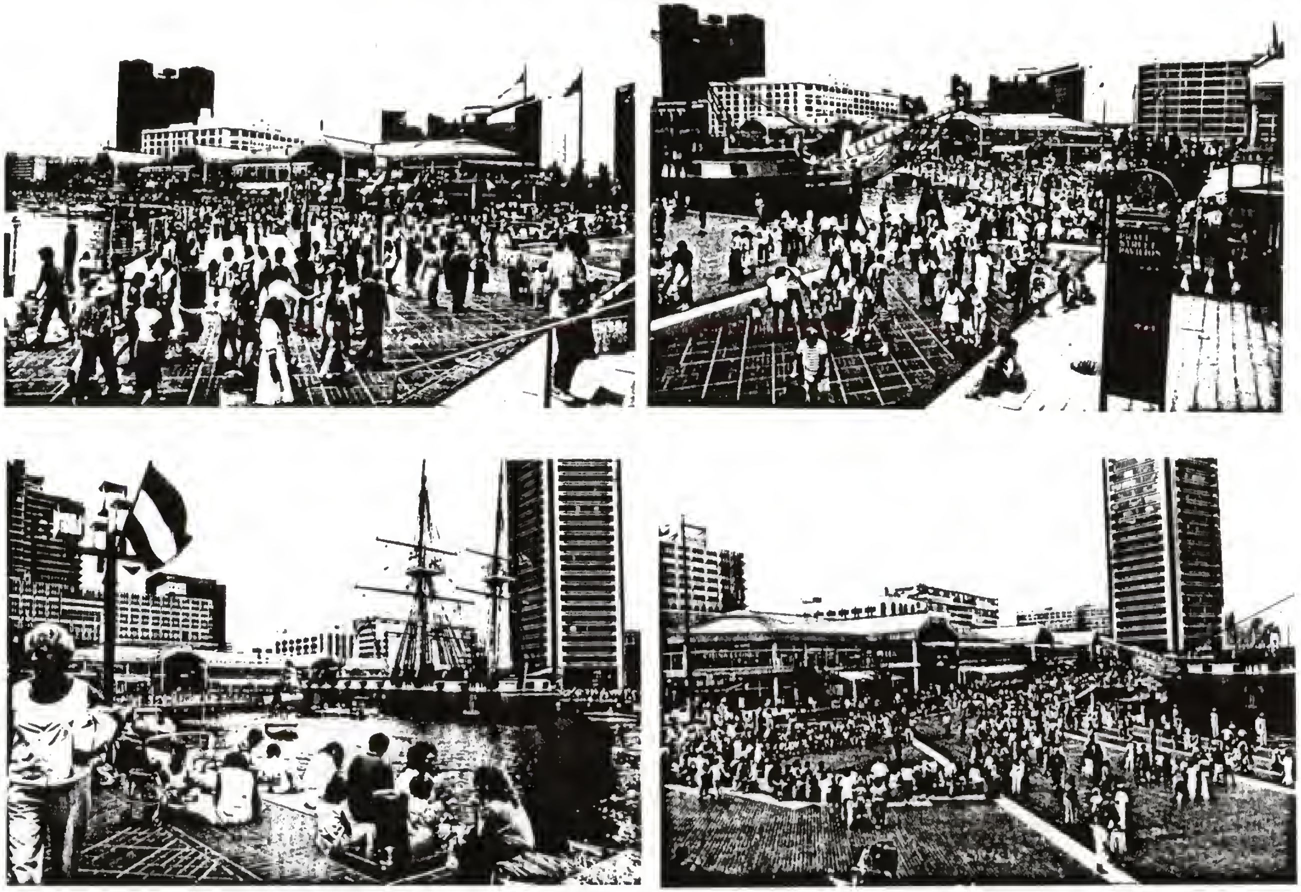
Figure 2.1

The Historic Waterfront of Baltimore's Harbor



MARYLAND HISTORICAL SOCIETY PHOTOS

Figure 2.2
The Urban Waterfront of Baltimore's Harbor



## Urban Open Space and Sociability

This section deals with the research that addresses urban open space as social space. A critical need for urban open space has been indicated with the provision and recent increase of neighborhood parks, urban plazas and urban waterfronts. Francis (1987, p.74) believes one of the prerequisites for a successful urban open space is use. In The Death and Life of Great American Cities, Jane Jacobs (1961) suggests that through use people can deem an urban open space a success or encourage failure by withholding their use. Walker and Duffield (1983) feel it is necessary to measure the success of individual open spaces, to appraise and analyze these spaces in order to evaluate the needs of the users. Whyte (1980b) further believes that a space that is used by people is a space that works. Bradley and Millward (1986) argue it is the scale and intensity of use that adequately measures the success of urban open space. Undoubtedly, regardless of how the success of open space is measured, ..."open space has contributed to a pleasant environment in which to live and work in providing a social environment for people" (Bradley & Millward, 1986).

A number of articles have been published dealing with behavioral environment in relation to outdoor design of social urban space. Researchers such as Deasy (1970), Cook (1971), and Clay (1978) suggest that the best urban open space design is the one that is the most sensitive to the behavioral needs of the potential users. Their studies have focused on quantitative characteristics of open space users such as age, sex, activities of users and time of use. Rutledge (1981) and Whyte (1980b) devote entire books to the subject of behavioral needs and social urban space. They believe that before an urban open space can be considered good in terms of sociability, environmental designs must service the behavioral needs of the potential users. They suggest designers can use behavioral observations to suggest insights to improve the success of their designs, specifically the sociability of urban open space designs. Observing behavior means to systematically watch people use their environments (Zeisel, 1981), by recording users age, sex, whether visiting alone or in a group, what they do during a visit and where and when they engage in those activities (Bradley & Millward, 1986).

Whyte (1980b) conducted a study entitled "The Street Life Project" where he observed people's behavior in downtown urban space of New York City. The results from this study were published in 1980 in The Social Life of Small Urban Spaces. His research led to some useful understanding as to why some urban spaces work and why some don't and is the key source used for research in this study. Whyte (1980b), Deasy (1970), and Rutledge (1981) believe urban open spaces should be sociable places, what attracts most people to these spaces are other people (p.19). Whyte (1980b) suggests the most important factor contributing to the design of a sociable space is the location of the space. The best locations are along streets with heavy pedestrian flow (p.19). The transition between these elements is critical -- it should be hard to tell where one ends and one begins, and is considered the key to success or failure of the space (p.57).

Whyte (1980b) states that the most popular social urban spaces are those with more sitting space (p.27). Sitting space is defined by

Lennard (1984) as benches, ledges, low planter edges, walls, and steps. He refers to these sitting elements as props, which make it possible for people to select specific locations to support the level of social involvement they desire (p.28). "They form islands in the stream of pedestrian traffic -- obvious places to just pause and rest, meeting places for small groups, or sites for street musicians and their audience" (p.26). Whyte (1980b) believes once the design has enticed people in, secondary criteria such as food, sun, wind trees and water should be met. For this study it is important to understand the issue of water relating to the sociability of urban open space. Whyte (1980b) does not dwell on this factor in great depth but does point out that water should be splashable, touchable and accessible.

## Issues Related to Urban Waterfronts

This section deals with three issues of urban waterfront design related to urban open space use: access, safety, and visual aesthetics. Francis (1987) defines the term urban open space as a space that is publicly accessible, designed and built for human activity and enjoyment. He defines urban open space as "accessible" or "unaccessible" verses "open" or "closed". Lynch supports this idea and states that open space is open when it is accessible. A fenced in waterfront area locked at night is not urban open space (p.76). Black, Howland & Rogel, (1983) suggest good access is a critical requirement for successful urban waterfronts. Waterfronts tend to have poor access because they have been ignored by neighboring developments or have been used for transportation purposes, consequently making them difficult to reach by car or foot (Benkendorf, 1981). Many cities are working to increase public access to their waterfront areas by developing their waterfronts as urban open space (Lynch, 1981).

Another issue related to urban waterfront design as open space is safety. The amount of freedom and control a space offers has been suggested as a basis for people's use and enjoyment of an open space (Carr & Lynch, 1981). One measurement of the success of open space, according to Francis (1987), is whether people are socially comfortable in the space and feel safe in it". He believes users need to feel a sense of control and ownership over a space (p.99). A symptom of the safety problem is the presence of "undesirables" (Whyte 1980b). He defines undesirables as winos, the most harmless of people, but are a possible result of the design product. Places designed with distrust of the user beget what they were designed for -- undesirables. Francis (1987) and Whyte (1980b) have found that some places use "social filters" such as guards to allow some users in while excluding others. Whyte (1980b) believes the key to guarding against undesirables is to make a place attractive to everyone (p.63). Supporting this idea, Black et. al. (1983) suggest the idea of promoting activity to improve safety...busy area's increase the users' sense of security.

The last element to be discussed relates to the visual aesthetics of the urban waterfront. Projects may not be regarded as a success unless they are designed to satisfy certain functional and aesthetic requirements. When water is included as a design element, it becomes an essential ingredient and must be taken into account (Wylson, 1986). Water can provide a dynamic, reflective or experiential element for the open space of the urban waterfront. The expansive scale of water in the urban waterfront can provide...a strong sense of place and opportunity for relaxation and reflection (Wylson, 1986). Water in it's various forms plays a vital role in the design of urban waterfronts. The visual pleasures which water provides are often taken for granted, and it is not always readily appreciated that some parts of our urban waterfronts would lose much of their attraction if it was not for the stretches of water that contribute to the scene (Marlowe, 1977; see **Figure 2.3**). "Water, through sight and sound, offers distinction to our surroundings...whether the environment is being used for work, recreation or habitation. Water creates a sense of aesthetic design unity - the unification of water as a material and surface" (Hubbard and Kimball, 1917). The overall awareness of waterfronts as an urban open space amenity can lead to a greater richness of civic life and leisure.

Figure 2.3

A View of Baltimore's Vast Waterfront

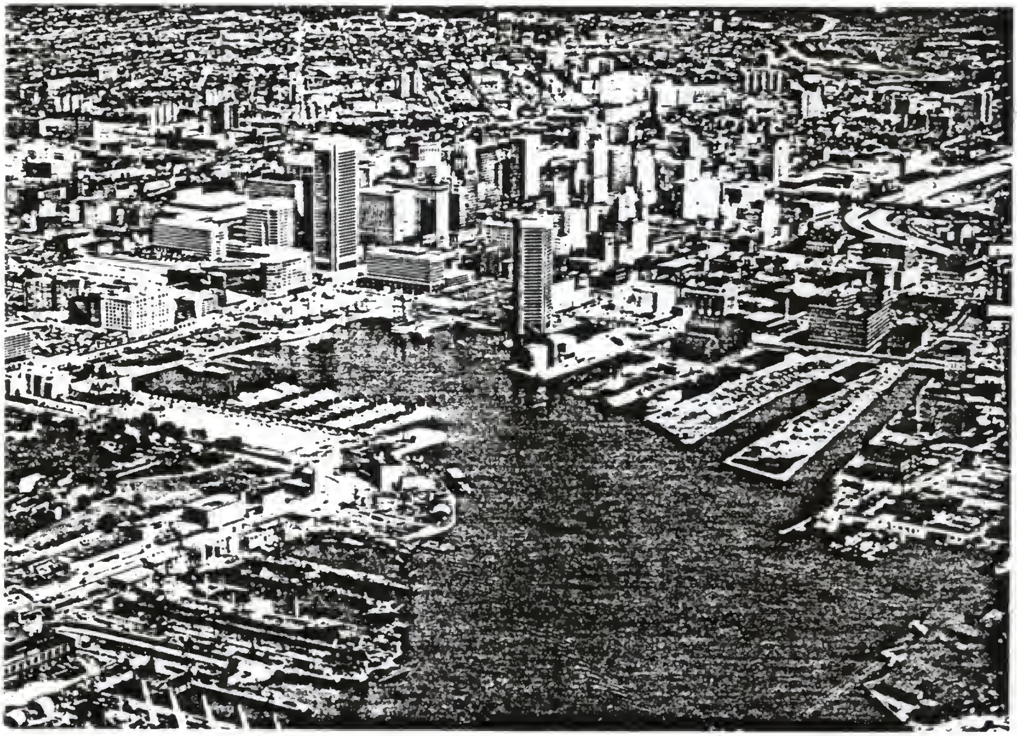


Photo credit: M.E. Warren

The next chapter examines the methodology researchers can use to evaluate and improve the quality of their research results. It will describe how to observe people, their settings and the relations between to two. A multiple-method research approach for solving the complexity of urban waterfront design will be discussed including, direct observation, behavior mapping, and focused interviews using standardized questionnaires.

# CHAPTER III METHODOLOGY

***************************************

## Description of Research Intent

The intent of this study is to investigate social urban space in an urban waterfront context, specifically, design components of Baltimore's Harborplace. These components are evaluated using William Whyte's (1980b) design criteria for social space: 1) location, 2) street-space relationship, 3) sittability, and 4) other factors, for example: food, sun, water, and trees. These criteria are analyzed for two social spaces of Harborplace. To further research these criteria, it is necessary to determine how the hypotheses and objectives stated in Chapter I were investigated.

## Research Methodology

The first step to the investigation was to test the hypotheses. It is crucial to understand the types of methodology and instruments used to research these hypotheses. In order to varify the hypotheses and gain insight into the objectives, three types of behavior research methods were used. These methods are: 1) case study analysis, 2) direct observation, including instruments such as photography and behavior mapping, and 3) interview questionnaire.

## Case Study Analysis

The first method of research was the case study analysis. Zeisel (1981) suggests "researchers use a case study design to develop intensive knowledge about one complex site, because case studies are designed to understand a site as a whole" (p.65). The case study method was used to declare the boundaries of the site to be studied, observe the elements contained within the site, the relationships among these elements, and delineate contextual site influences. In relation to this thesis, this type of research can provide information about a specific urban waterfront design, such as Baltimore's Harborplace, in order to design another.

The setting or context of the research design has a bearing on the study results. The context for Baltimore's Harborplace is a natural research setting. "Natural settings offer researchers the unique opportunity to observe people in settings they choose to come to, engaged in activities which a contrived setting could not re-create (Zeisel, 1981,p.72). Zeisel believes that one cannot fully observe a situation and its context if certain parts are excluded from the study environment, as they might be if the situation were transferred to a controlled, experimental setting (p.72). Natural settings help researchers find out what is actually going on, what elements, relationships, and dynamics are prominent. In case studies, multiple research techniques such as participant observation, are often needed for investigators to get sufficient data about a case study site (Zeisel, 1981, p.66).

## Direct Observation

The second method of research was direct observation. To determine the two areas to be studied, a pre-observation evaluation of the site was conducted. Harborplace was visited for one week prior to the start of the actual study. During this week, the overall site was photographed in order to observe and determine where the highly active pedestrian areas and social spaces were, thereby, locating the hub of the study site. As previously mentioned, Whyte (1980b, p.54) argues that the critical design factor for social urban space is site location and is a primary key to the success or failure of the space. A well designed space must be located near a street or path of major pedestrian flow. In the contextual setting of the urban waterfront, it is the promenade that becomes the street -- an internal street. Internal streets can provide the most desirable social elements of city streets while providing an escape from the noise, traffic, and fumes often associated with them (Schwanke, 1987, p.165).

Rutledge (1981, p.29) believes a prior observation of the activities on a site help the researcher "become aware of a place's use as well as the user complexity within the site." Zeisel (1981, p.111) states "observing behavior in physical settings generates data about people's activities and the relationships needed to sustain them; about regularities of behavior; about expected uses, new uses, and misuses of a place; and about behavioral opportunities and constraints that environments provide". Researchers such as Francis (1984), Marcus (1987), and Whyte (1980a and 1980b) have used observation as a technique to assess activity in gathering spaces. Whyte's (1980b) observation study of New York City's downtown urban space, has become a widely recognized approach to understanding the relationship of people and public spaces (Francis, 1984, p.22).

Rutledge (1981, p.29) suggests methods similar to Whyte's (1980b) study, including the need to make a list of who is doing what, giving equal consideration to formal and informal activities (p.29). Formal activities can be defined as those activities which are intentional, eg., people purposely meeting others, as opposed to informal activities which are the accidental meeting of others. To visually discern between these two activities is difficult, therefore, the personal interview/ questionnaire method can be used to help clarify these differences and is discussed later in this chapter. Rutledge (1981, p.30) states it is also helpful to observe popular places within the study area. This serves to forecast where people might naturally congregate. To further study the inner workings of Harborplace, two instruments were used to observe and document the behavior of the users, they were: 1) photography, and 2) behavior mapping.

### Photography

The first instrument used to clarify the observation study was photography. A 35 mm camera was used to document the activity which occurred in the two study areas. Similar to the Grey, et at. (1970, pg. 92) study, the camera was not concealed. However, this researcher did make the effort to be inconspicuous. The camera was turned away from the view of the user so as to avoid potential camera shyness, or an abrupt halt of spontaneous activity. Grey, et al. (1970, pg.95) also suggesting the problem often associated with this instrument is that "ground-level photography can only record the activity within a single open space, without reference to any other space". To overcome this problem, aerial photos taken from the 28th floor of an on-site building, were used to record the entire study site under observation.

Zeisel (1981, p.123) strongly believes an advantage of still photography is that it "can capture subtleties that other methods may not record." He also believes photographs are helpful to use throughout an entire research project because they have illustrative qualities (p.358). Friedberg (1976, p.358) also states photographs can provide the opportunity to produce and communicate information related to design issues and human behavior.

Photography was used to provide an initial overview of the site, thereby visually determining behavior patterns of the users in order to choose two selected areas for further study. Through analyzing these slides, it was apparent that the area near the Light Street Pavilion was a more popular sitting and socializing space, as opposed to the area near the Pratt Street Pavilion (see Figure 1.4 and 1.5). Davies (1981, p.92) defines socializing as "a person who is engaged in conversation with another person." This person can be a child or adult, stopped or while walking. It was then determined that these two areas would be chosen for an in-depth study to find out if one space works better than the other, and why. In order to document the observation of people's behavior within the two study areas, a technique used by Whyte (1980b) known as behavior mapping was used.

### Behavior Mapping

Behavior mapping is defined by Davies, (1981, p.26) as a tool used to systematically study people's behavior. This mapping technique was adapted to relate to the environment of the urban waterfront at Harborplace (see Appendix A), and was used to generate information about the pedestrian activity within the study areas. Knowing what these activities are can be helpful in providing information for the designer thereby, expanding the designers knowledge of the potential use of a space. Behavior mapping can also be used to study pedestrian movement (Davies, 1981, p.26) This method can be used to determine where people sit or stand, or simply gain insight to the spaces in which they simply move through.

Whyte (1980b, p.23) found that "one could map the location of every sitter, whether male (X), female (O), alone, or with others (XO), in about five minutes, in little more time than a simple head count would take". However, Davies (1981, p.91) argues that "one person can only record approximately 200 feet of sidewalk at one time _if_ (and this is a big _if_) pedestrian volumes do not exceed about 40 people in a three minute period". In relation to the urban waterfront context, Davies' approach is more appropriate to the size and scale of the two selected study areas, since Whyte's (1980b) study focused primarily on small urban spaces. The direct observation of people's behavior within the study areas was mapped, using a time schedule of thirty minute intervals, during the hours of 2-4 pm. This time period was selected because it was independent of the lunch and dinner hour use, and therefore gives a better picture of the typical plaza use; as Whyte

(1980b, p.18) suggests, "off-peak use often gives the best clues to people's preferences". If a researcher wants to get a true idea of how a space actually works, he/she should study the space after rush hours. This gives the researcher a better idea of where people choose to sit, not where they must sit.

One limitation associated with several behavioral research studies is that detailed types of pedestrian behavior and the amount of time people engaged in different types of activities were ignored. This was due to the large activity area and urban scale of the studies conducted (Francis, 1984, p.34). Francis states "the primary focus on behavior, such as perception or sense of place, is not addressed by this technique" (p.34). Therefore, this researcher used the technique of an interview questionnaire to survey and capture the users' attitudes and activities related to Harborplace, and is discussed later in this section.

Zeisel (1981, p.122) also acknowledges the use of behavior mapping as an observation recording device, and suggests that if researchers want to observe and analyze several people in one area at a specific time, mapping activities can be a useful method. There are several limitations associated with behavior mapping. Davies (1981, p.91) believes if there are greater numbers of users than indicated above, one may find he or she has to collect some information separately. This researcher overcame this problem by extending the mapping time interval to a systematic thirty minute time frame in order to record possible activities and information. Zeisel (1981, p.123) believes an advantage to using this technique is that designers can poses a better visual understanding of how an entire area is used, at one specific time, by using behavior mapping techniques versus statistical tables (p.123).

During the behavior mapping process, this researcher used the vantage point of a marginal participant. "Marginal participant", as defined by Zeisel (1981, p.118) is "one who adopts the vantage point of a commonly accepted unimportant participant"; they are seen by actual participants as just another person enjoying the scenery. The observation mapping focused on: a) gender -- male or female, b) the mix of people -- individuals or groups, and c) their activities. The Harborplace activities were mapped in two categories: 1) resting (which includes sitting and standing), and 2) moving. These categories are defined by Davies (1981, p.92), they are:

> sitting --a person sitting on a bench, ledge, step, or anywhere
>
> standing -a person not moving, possibly waiting for someone or engaged in a conversation.
>
> moving -- someone who is walking, perhaps through the study space to another destination.

These activities were predominantly the main activities documented within the two study spaces, in relation to William Whyte's (1980b) criteria for social urban space. A further analysis of his criteria can be see in Chapter IV, Analysis and Findings.

Whyte (1980b) implies what people do and what people say are two different things, therefore, this study uses an interview questionnaire method to record the opinion of the people who visit the waterfront. Observation is a means to help clarify the sociability of the space, using a behavior mapping technique to document the user activity as it occurs. Observation of what people do in the two spaces chosen, can help identify the strengths and weaknesses of the Harborplace design. To further define this research, it is crucial to understand the type of interview questionnaire used and the type of questions asked.

## Interview Questionnaire

The third and last method of research used was a focused interview questionnaire. Moser & Kalton (1972, p.270) state the most common method of collecting data in social surveys is personal interviewing". Peil (1982, p.112) believes the personal interview approach can produce more satisfactory results than a questionnaire from an unknown source. Zeisel (1981, p.137) defines a focused interview as containing questions that address what people think, feel, do, know, believe, and expect. The questions for this research focused on the issue of the social space within the Harborplace design; what the users found most interesting about it, and how they feel about it. This method was used to study reactions to the design of Baltimore's Harborplace.

The study focused on weekend use of the harbor. This is when Baltimore's Harborplace is the busiest, allowing an analysis of the peak use within the two study areas. The harbor was observed during the summer weekends of 1987, from approximately May 30 through August 9. The interview was given to randomly selected people who were currently in the two study areas during the day of that interview. One hundred (100) people were interviewed per study area, consisting of 50 men and 50 women in each. The questionnaire consisted of 19 questions; 15 short answer and 4 demographic questions. The questions used a system of pre-coded choices eg: (1) yes, (2) no, (3) maybe, (4) don't know, and (0) N/A. Some questions used a value rating system of numbers ranging from one to five, with five being the highest or most important value. An example of the two types of pre-coded questions are as follows:

1) Do you like to sit where you can watch and observe others?

a. yes _____________ (1)
b. no _____________ (2)
c. maybe ___________ (3)
d. don't know ______ (4)
e. N/A _____________ (0)

2) Rate the inner harbor on a scale of 1-5 (5 being the best) for the following items:

a. social atmosphere 1 2 3 4 5
b. mix of activities 1 2 3 4 5
c. the view 1 2 3 4 5
d. the food 1 2 3 4 5

The questionnaire format used to conduct this research is listed in Appendix B at the end of this document.

The amount of time used to complete a questionnaire was approximately 5-10 minutes. Some respondents were gregarious, making it hard to create a steady pace through the interview. The questionnaire answers were treated confidentially and the interviewee was considered anonymous. Moser & Kalton (1972, p.275) believe that confidential treatment of statements "should be made clear to the respondent". As seen in Appendix B, the introduction to the interview contained this information. They also state there are several factors to consider when asking questions in the interview method (p.277), they are:

1) uniformity in the asking of questions

2) words of explanation

3) adequacy of responses

4) probing inadequate responses

5) biased phrasing of questions

6) recording answers to open ended and closed questions

These problems were resolved by using one interviewer. The advantage of doing self-structured interviews is that all questions can be uniformly asked, using the same tone and quality of voice. If respondents do not understand a specific question, the same words of explanation can be used for each interview, whereas several interviewers may use a different choice of words. When this interviewer felt responses were inadequate, the respondent was probed for a further response, therefore allowing all 200 questionnaires to have adequate responses. A critical problem often associated with questionnaires is that the phrasing of questions can be biased. This researcher was careful to avoid biased questions.

The actual questionnaire used in this study consisted of open ended and closed questions. An open question, as defined by Peil (1982, p.120), "allows respondents to provide their own answers". He also believes this type of question can provide a greater variety of answers and depth than a closed question. The coding becomes more difficult, but is sometimes more helpful because closed questions may lead the respondent to simply agree with the answers provided. Also, this type of question is helpful when answers cannot be predicted. Moser & Kalton

(1972, p.281) state the Government Social Survey interviewers record open responses verbatim, word-for-word, in the first person, exactly as the respondent gives the answer, recording the answer at the time of the interview.

Peil (1982, p.120) defines a closed question as one that "presents a series of answers allowing the respondent to choose one answer. As previously mentioned, all answers were pre-coded with the exception of the open ended questions which were coded after the study was conducted. These responses were grouped into four or five similar categories, and then coded. In order to interpret and identify the data findings, the Reflex data base program was used in which to input and cross analyze the interview questionnaires. These findings were then analyzed according to Whyte's (1980b) design criteria, focusing on the strengths and weaknesses of the Harborplace design. A further review of the results from this observation and interview study are discussed in the next Chapter, "Analysis and Findings".

# Chapter IV Analysis and Findings

********************************************

This Chapter analyzes the data that have been collected and documented through the use of observation, behavior mapping, and interviews. In order to analyze and evaluate the data, a set of criteria was established as a guide for measurement. As discussed in Chapter I, this study focuses on William Whyte's (1980b) design criteria as a checklist for evaluation. Whyte's study deals with issues of social urban space, defining the people in the spaces, their activities, and their behavior patterns.

Of Whyte's four criteria for social space, three criteria were chosen for analysis. They are: 1) location, 2) street-plaza relationship, and 3) sittability. These criteria used in this evaluation can provide a basis for the validation or invalidation of ideas and assumptions which ultimately lead to the conclusions in Chapter V. In order to arrive at these conclusions, the overall picture was examined to give an initial analysis of the context and site impacts surrounding the study areas. I also examined criteria that are not discussed in Whyte's work but have bearing on the Harborplace site because of its waterfront character.

The preliminary observation of the two study areas suggests each space has strengths and weaknesses, with study area 1 indicating a stronger social space than study area 2 in the sense that it appears to be used by more people. Thus, the hypotheses stated in Chapter I suggest study area 1 may work better in terms of sociability than area 2. Also, qualities unique to each area may reinforce Whyte's argument for social space, as well as lead to areas of social space his argument did not predict, since his study sites did not include waterfronts. In order to understand the strengths and weaknesses and hypotheses associated with the study areas, it is important to analyze the social-space patterns of the two areas. This chapter provides an investigation of the two study areas, focusing on: (a) site analysis; (b) analytical procedure for behavior mapping, (c) analysis of aggregated patterns and activities, (d) an analysis of gender types, and (e) an analysis of the interview questionnaire data.

## Site Analysis

The site analysis is an important part of this thesis because it can provide a sense of contextual identification and site impacts for the two areas studied. The study areas are located within a regional vicinity of the Baltimore-Washington metropolitan area. Since the opening of Harborplace in 1980, this location has become a major vacation destination within a one-hour drive for a population of some 2.29 million (Fuller, 1987). Fuller states "at year-end in 1985, the total Baltimore Metroplitan Statistical Area (MSA) population was 2.29 million persons, of which 740,600 lived in Baltimore City". Due to the regional situation of Harborplace, most users will likely drive to the site rather than walk. The Baltimoreans who live in and around Harborplace comprise only a small pool of users within a walking distance (see Figure 1.4, chapter I), with a majority of these users living more than 3-4 blocks from Harborplace. Therefore, these users will probably drive because this distance is greater than a 30-minute minimum walk. In addition to the overall analysis of Harborplace, it is necessary to review the analytical procedure of the behavior observation. This will help to clarify the process in which this research study was analyzed.

## Analytical Procedure for Behavior Observation

As previously stated in Chapter III, this study focused on typical weekend use. This is when the two study areas are the busiest, thereby providing the best picture of typical plaza use. The analvtical procedure involved three specific types of user information, they were: 1) men and women, 2) as individuals or in groups, and 3) whether these people were resting or moving. All three of these categories were analyzed by aggregating the absolute numbers and percentages of people within each category by time, every 30 minutes, from 2-4 pm on weekends. This particular time frame was studied because it was independent of the noon and dinner use hours which may distort typical usage. Whyte (1980b) believes the off-peak use can give one a better idea of what people do and where they will sit because people have a choice. This analysis process was used to record behavior patterns in order to help delineate the social differences between the two study areas. To understand the inner workings of Harborplace one must have an overview of the behavior patterns focusing on the concentrations of people within the two study areas.

## Analysis of Aggregate Patterns in the Two Study Areas

Most important, both areas are popular social spaces, and are located near several major activities, such as the World Trade Center, the National Aquarium and a nearby open space park (see Figure 1.4, chapter I). As indicated in Chapter I, study area 1 and 2 are similar in a variety of ways, including: size, shape, landscape, hardscape, seating, pedestrian circulation and function. Because of these similarities, it is necessary to further analyze each space in terms of the overall number of users within each space. **Table 4.1** shows all aggregated behavior patterns for the two areas studies, per each half hour unit time, from 2:00 pm - 4:00 pm. Specifically, if we look at **Table 4.2**, we see that area 1 per all five unit times contains a total number of 298 people as compared to area 2 having a total number of 333 people per all five unit times.

It is important to emphasize that these numbers are approximations of people within the two spaces and are not to be confused with the actual number of people who were actually in the two spaces. These approximations are due to the fact that Harborplace is visited by a large volume of people during a typical weekend use, making it difficult to record actual numbers of users. Therefore, this process of recording people's behavior concentrated on the concept of typical pattern use, such as: what was going on within the two spaces and when, people were congregating, moving, sitting, etc., and what the genders of the users were. With this assumption in mind, behavior patterns were then recorded and mapped for each study area. These differences stated above may be due to several reasons, and these reasons are discussed in the next section, "Overall Use Patterns of People".

# TABLE 4.1 and 4.2

TABLE 4.1 Number of People Per Aggregate Category

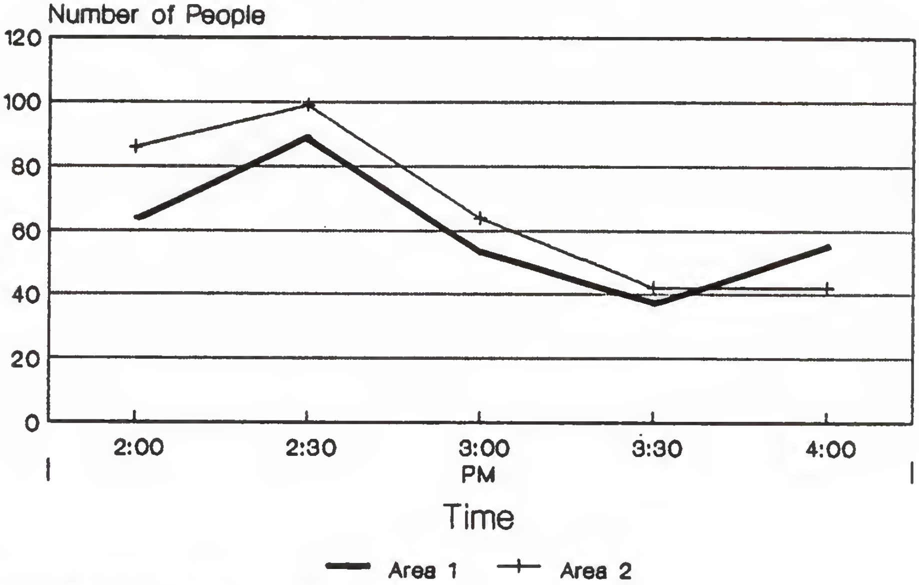
| DESCRIPTION | 2:00 P.M. | | 2:30 P.M. | | 3:00 P.M. | | 3:30 P.M. | | 4:00 P.M. | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 |
| Total People | 64 | 86 | 89 | 99 | 53 | 64 | 37 | 42 | 55 | 42 | 298 | 333 |
| Men | 31 | 34 | 33 | 43 | 20 | 27 | 11 | 23 | 19 | 19 | 114 | 146 |
| Women | 33 | 52 | 56 | 56 | 33 | 37 | 26 | 19 | 36 | 23 | 184 | 187 |
| Sitting | 39 | 34 | 26 | 20 | 41 | 30 | 29 | 24 | 44 | 27 | 179 | 135 |
| Moving | 25 | 52 | 63 | 79 | 12 | 34 | 8 | 18 | 11 | 15 | 119 | 198 |
| Individuals | 34 | 30 | 75 | 16 | 42 | 13 | 28 | 15 | 42 | 25 | 221 | 99 |
| Groups | 7 | 15 | 5 | 26 | 3 | 19 | 3 | 9 | 4 | 7 | 22 | 76 |
| | | | | | | | | | | | 0 | 0 |

TABLE 4.2 Number of People Per Unit Time

| DESCRIPTION | 2:00 P.M. | | 2:30 P.M. | | 3:00 P.M. | | 3:30 P.M. | | 4:00 P.M. | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 |
| Number of People | 64 | 86 | 89 | 99 | 53 | 64 | 37 | 42 | 55 | 42 | 298 | 333 |
| | | | | | | | | | | | 0 | 0 |

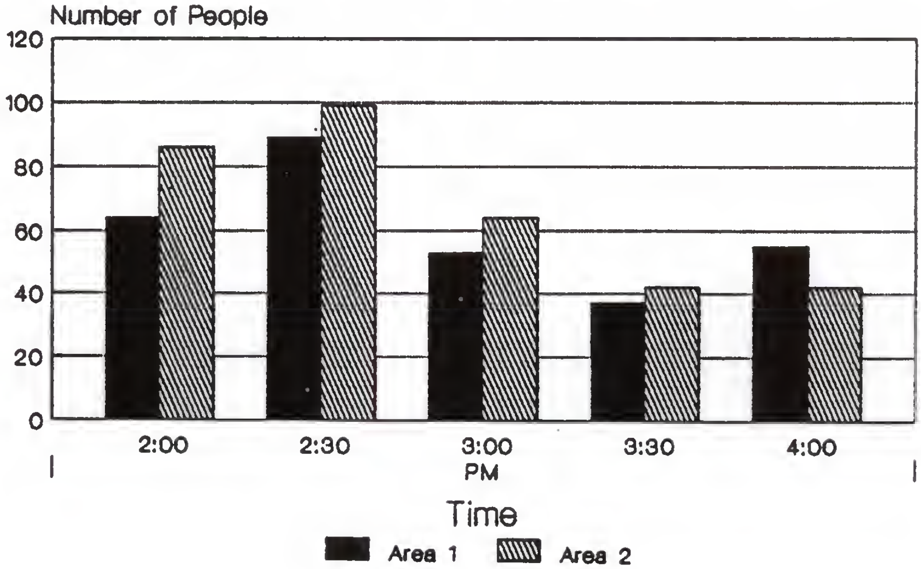
Figure 4.1

## NUMBER OF PEOPLE
### Harborplace Study Areas



Weekend Use Behavior Mapping Data

### Harborplace Study Areas



### Overall Use Patterns of People

As stated earlier, the number of people observed in this study is to be considered a representative number, and is not to be viewed as a precise count. The initial review of the concentrations of people in each area may lead one to believe that there may be some disproof of the first hypotheses, suggesting that area 2 may instead be the popular social space. One reason for this statement is that in terms of overall numbers, study area 2 has a total number of 333 people per five unit times versus the 298 total number of people per five unit times in area 1. With this in mind, an attempt was made to relate pedestrian concentration to the use of the two study spaces.

The concentration within the two study spaces can be compared to an analogy of river movement, as stated by Grey et. al (1970, p.96). If a space possessed a number of users in one area, it could be compared to a pool of space, thereby having a holding capacity to contain users. Study area 1 seemed to possess this type of holding capacity (see Appendix C, area 1), creating sub-spaces or eddies of activity areas along the length of its promenade. These areas provide places where pedestrians seem to pause, sit, rest and relax. However, the concentration map for study area 2 indicate just the opposite, the promenade seems to be a place that was used for channels of movement with people moving from one place to another (see Appendix C, area 2). This notion of movement can also be applied to the relationship of sitting versus moving and is seen later in this chapter.

Specifically, if we look at Appendix C, area 1, "Total Aggregate Usage Map of All Users, shows that there are only a few people in the central space of the promenade in area 1. In general people are involved in either the activity of sitting or standing at edges. People are heavily concentrated at corners of sitting space such as ledges and benches. This is where they can watch people entering the pavilions and walking along the promenade, as well as have a view of the water-related activities. People also tend to spread out along edges of linear sitting spaces, these spaces are somewhat withdrawn form the corner spaces.

In addition, there also seems to be a high concentration of people along the edge of the promenade in area 1. These people are either standing at the edges or sitting along the granite ledge. People tend to cluster near the edge of the promenade to observe water-related activities. These spaces also provide good views of the harbor, as well as the marine life within the water. It can also be noted that there are differences between concentration of users who are women and those who are men. Appendix C, area 1 shows that women tend to concentrate along corners and edges of sitting spaces. Whyte's (1980b) study indicated that women tend to sit in the "back" of a space, away from the "front". By this he means that women, when given a choice, will slightly withdraw from a main activity space, and congregate more in secondary spaces in order to observe and watch peoples' behavior. This notion is expressed in Appendix C, area 2. Another interesting point is that women appear to be in small clusters. This is evident in their patterns of movement along the promenade, as well as their concentration along corners.

In comparison, the men in area 1 tend to be spread out, they appear as individuals rather than clusters. If we look at Appendix C, area 1, one notices that men are concentrating in almost the same areas as the women. This observation contrasts with Whyte's theory that was stated earlier. However, this may be due to the fact that there are more women in the space itself. This relationship of men and women, and where they concentrate can be further reviewed when we analyze the activity of sitting discussed later in this Chapter.

The concentration of users in area 2 is quite different than that of area 1. In general, the people in area 2 appear to be evenly spread throughout the entire space with the exception that there is a high concentration of users who are sitting on benches. In proportion to the different concentrations, more people are moving along the width of the promenade than are sitting. There may be several reasons for this behavior pattern. One reason is that the space is used as a transition point from one on-site destination to another. As previously mentioned, a magnet effect seems to be pulling people through the space. However, considering the small amount of sitting space and ledge space that exists, there is a high concentration of people within this space. These spaces are used for people-watching because of their elevation, and they also allow for good views of the harbor.

Specifically, when we compare the two areas together, Table 4.2 and Figure 4.1 (graph) shows there are slightly more people in area 2 per unit time from 2:00 - 3:30 pm, with the only decrease occurring at 4:00 pm. While this time frame decreased, the proportion of people in area 1 increased. This may be due to the fact that at this particular time, an evening concert was about to start in the amphitheater, which is located centrally between the two study areas. People may have had a tendency to shift to area 1 because there are more seats, such as benches and ledge space in which to sit and rest on while listening to the performance (see Appendix C, area 1).

A further look at Figure 4.1 (graph) shows that the largest increase of people occurred at approximately the same time for both areas. At 2:00pm, area 1 has 64 people per unit time, steadily increasing to a total of 89 people per unit time at 2:30pm; in comparison, area 2 averages only slightly higher for the same time period, with 86 people at 2:00pm, increasing to 99 people by 2:30pm. In order to further examine the two study areas, it is necessary to understand the overall use patterns of the people within each space.

This peak use for the two study areas may be attributed to the individual activity that was occurring within each area. If we look at Appendix C, area 1, we notice that there appears to be several small craft recreational boats in the area. It was observed that the photos of these boats had actually linked themselves together in order to socialize with the people on the adjacent boats. The boat people were "showing-off", by this I mean they were starting their engines, talking and basically getting loud. This commotion seemed to attract people to the space to watch what was going on, then by 2:30 pm all the boats but one had left and people dispersed. Once the number of boats had diminished, so did the number of people within the immediate area.

At this same time period, area 2 had a similar occurrence with a specific water-related activity. Area 2 contains a dock area where people can board a water taxi that will take them to various points throughout the harbor. During the unit time of 2:00 pm, a water taxi had just pulled up to unload people, thereby increasing the number of people within the immediate area. This increase is steady until the water taxi leaves at the unit time of 2:30pm, then as previously indicated in area 1, area 2 also shows a similar pattern of decrease in the number of people per unit time till the end of the study period at 4:00 pm. In general, it can be noted that water-related activities are factors that can contribute to the use of a surrounding space, increasing or decreasing the concentration of people within that particular space.

Grey et. al (1970, p. 109) suggest physical-form determinants and characteristics of a "stream" could be used as the basis for predicting pedestrian movement. Physical characteristics of the study areas were analyzed, and the physical elements, such as planters, steps, benches and width of the promenade space was recorded -- anything that may interrupt the movement of users. In addition, areas that were recessed from the pedestrian circulation paths were also recorded. As Grey et. al (1970, p.109) further believe areas that do not provide recessed spaces along edges of circulation paths, may therefore create a situation which only creates diversions within the space itself. Since the initial overview of the two study areas creates somewhat of a paradox, it is necessary to review Whyte's (1980b) design criteria for social space in which this study was based, thereby using these criteria to evaluate the sociability within the study areas. To clarify the aggregate maps in further detail, it is helpful to analyze each area for: a) gender, b) activities, and c) individuals or groups of people.

## Gender Differences

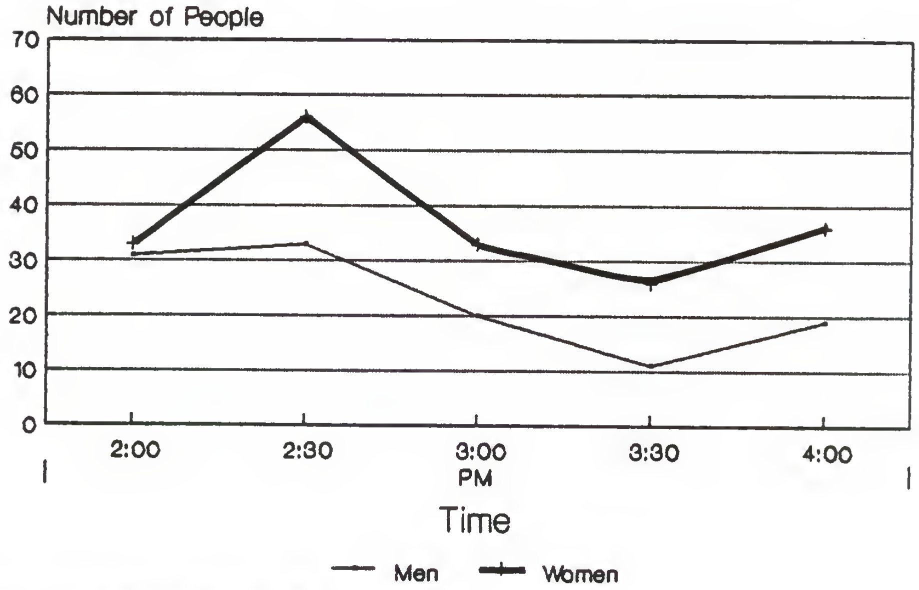
Overall, the two study areas had consistently more women than men for all five unit time periods. In relation to social urban space, it is important to understand the relationship between gender types. Whyte's (1980b) study indicates the best-used plazas are those having a higher proportion of women. In terms of percentage, study area 1 has a higher proportion of women than men, with a slight increase per each unit time frame from 2:00 - 4:00pm,(see Figure **4.2** (graph) and Table **4.3**). The significant difference appears to occur during the hour of 3:30pm, with a proportion of (70%) women compared to (30%) men. This may be due to several factors. First, the figure shown in Appendix C, area 1 indicates the presence of numerous recreational boats docking along side of the promenade for the evening. Observation notes indicate women were sitting along the edge of the promenade to enjoy the views of these boats. Secondly, these women were taking a break from the activities of nearby pavilion shopping. Overall, the day is coming to a close, hence the women seem to have been taking a late afternoon rest. This ratio of men versus women may also reflect the sittability of area 1 and is discussed later in this Chapter, in "Analysis of Activities". Study area 2 also has a higher proportion of men to women, but the significant difference is less. In general, the percentage of women to men is lower than area 1. It is interesting to note that while area 1 increased in women during the unit time of 3:30 pm, area 2 decreased, with a slightly higher proportion of men (54%) to women (46%). These findings can be further compared when aggregating men versus men, and women versus women for the same study period.

Generally, area 1 and area 2 have a low proportion of men. **Figure 4.2, 4.2a** and **Table 4.3** show there is a similar balance between the men in the two study areas, with a minimal range averaging a low of 30 to 46 percent. This may be, as Whyte (1980b, p.18) suggests, that a successful plaza tends to have more women than men. This insight is an important fact to consider when analyzing the two study areas in terms of men and women, and can be used as an evaluation tool. **Figure 4.2, 4.2a** and **Table 4.3** delineate a high proportion of women in both of the study areas. The overall range of the two areas is much higher in number than the men's, with averages between 46 and 70 percent. This reinforces the theory that both plazas are relatively equal in terms of successful social space if women are used as indicators. To further analyze this data, one must look at the relationship between the activities of the two study areas, specifically, sitting, standing and moving.

Figure 4.2

# TOTAL USE - MEN & WOMEN

## Harborplace Study Area 1



Weekend Use Behavior Mapping Data

## Harborplace Study Area 2

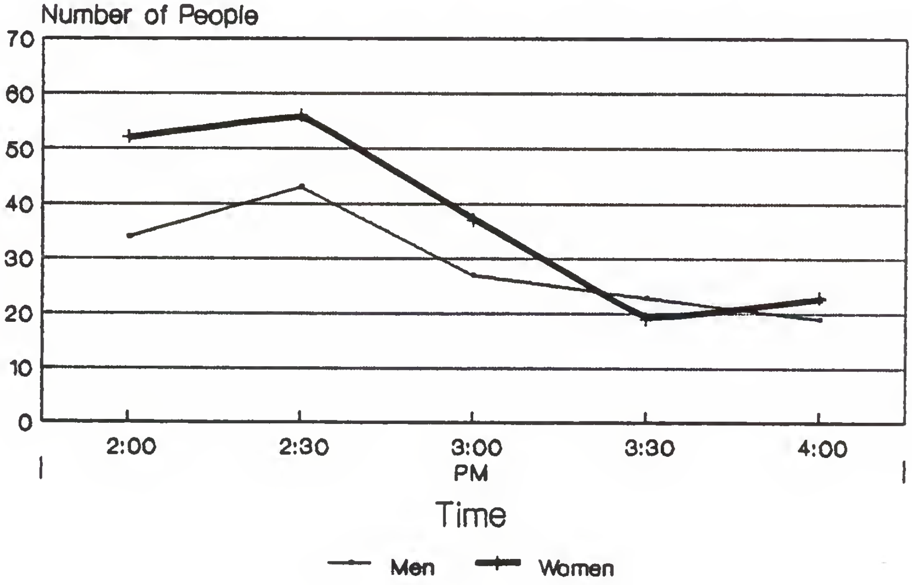
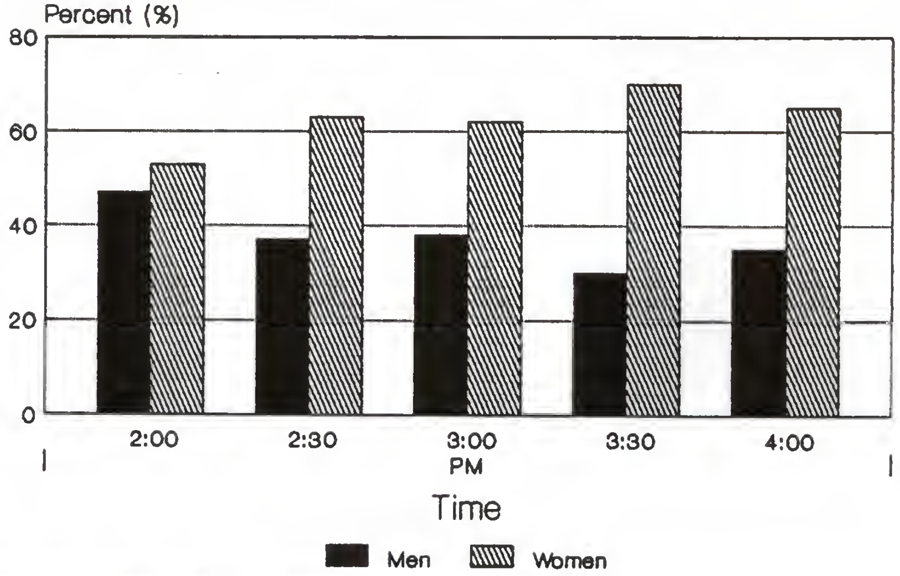


Figure 4.2a

# TOTAL USE - MEN & WOMEN

## Harborplace Study Area 1



Weekend Use Behavior Mapping Data

## Harborplace Study Area 2

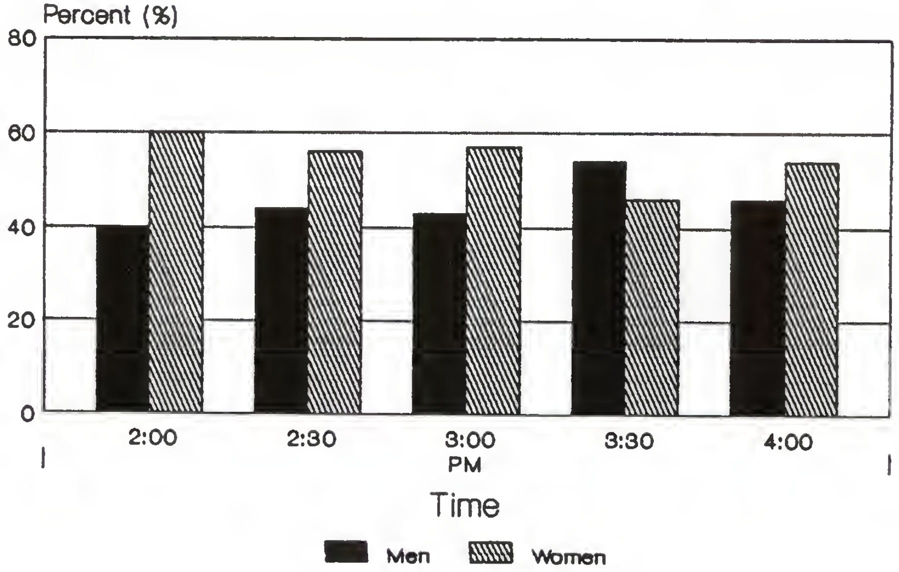


Table 4.3

TABLE 4.3 Gender Types of Plaza Users Per Unit Time

| DESCRIPTION | 2:00 P.M. | | 2:30 P.M. | | 3:00 P.M. | | 3:30 P.M. | | 4:00 P.M. | | TOTALS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 |
| Men | 31 | 34 | 33 | 43 | 20 | 27 | 11 | 23 | 36 | 19 | 131 | 146 |
| Women | 33 | 52 | 56 | 56 | 33 | 37 | 26 | 19 | 19 | 23 | 167 | 187 |
| | | | | | | | | | | | 0 | 0 |
| TOTAL | 64 | 86 | 89 | 99 | 53 | 64 | 37 | 42 | 55 | 42 | 298 | 333 |

## Analysis of Sitting and Moving Behaviors

As mentioned earlier in this chapter, Harborplace is located adjacent to several major activities. Specifically, study area 1 is located near a large open space park, separating it from the major activity of the Maryland Science Center. On the other hand, study area 2 is located in proximity to two of the largest attractions in the Inner Harbor: the World Trade Center containing an observation deck, and the National Aquarium a major tourist attraction. Although study area 2 is set apart from the immediate hub of these two activities, it is located along a major pedestrian path which in turn links the two areas.

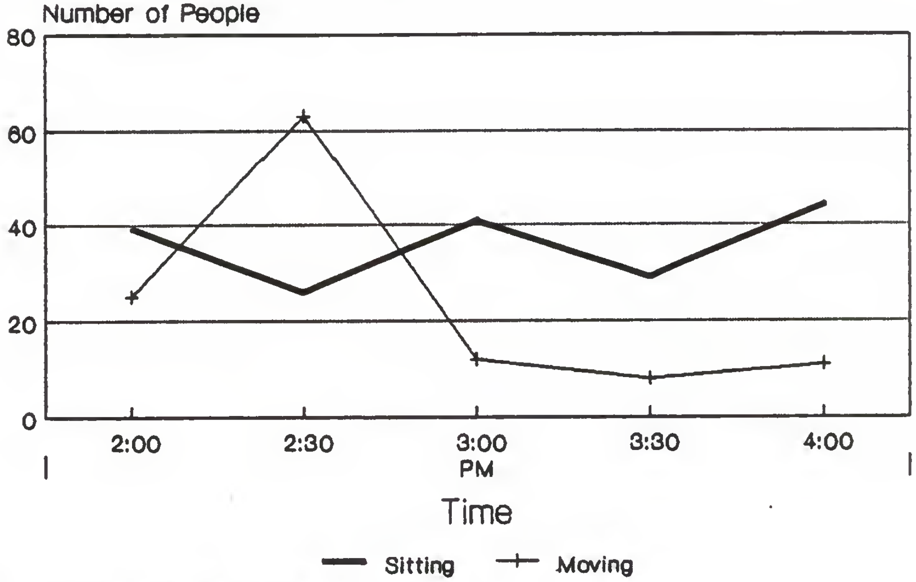
As indicated earlier, there are more people in area 2 (333) in terms of physical numbers as compared to area 1 (298). This may be due to the location of the two study spaces described earlier in this section. Whyte (1980b) believes the critical design factor is the location of a plaza, and is the key to social space. Whyte (1980b) believes the critical design factor is the location of a plaza, and is the key to social space. The location of area 1 and 2 each seem to serve different pedestrian circulation purposes. Study area 1, because of its relative distance from surrounding activities, acts as a destination for users whereas, area 2 becomes a type of thoroughfare, actually pulling people through its space to reach other on-site destinations. Therefore, this theory of area 2 serving as a thoroughfare may be a factor contributing to the larger number of users in area 1. However, these people are probably not held in the space for any great length of time.

Overall, study area 1 had 60% (a total of 179 users) of the users sitting versus study area 2 where only 40% (a total of 135 users) of the 333 users were sitting (see **Figure 4.3, 4.3a, 4.3b and Table 4.4**). As would be expected, the opposite was therefore true for study area 2. This area contained a higher number of people moving, (60%) versus the (40%) in study area 1 (see **Figure 4.3, 4.3a, 4.3b and Table 4.4**). This numerical fact is a verification of the results of Whyte's (1980b) study on small urban social spaces. Whyte (1980b, p.27) suggests most popular plazas tend to have more sitting space; however, this does not include qualitative factors, eg: a bench versus concrete.

Figure 4.3

# PEOPLE - SITTING & MOVING

## Harborplace Study Area 1



Weekend Use Behavior Mapping Data

## Harborplace Study Area 2

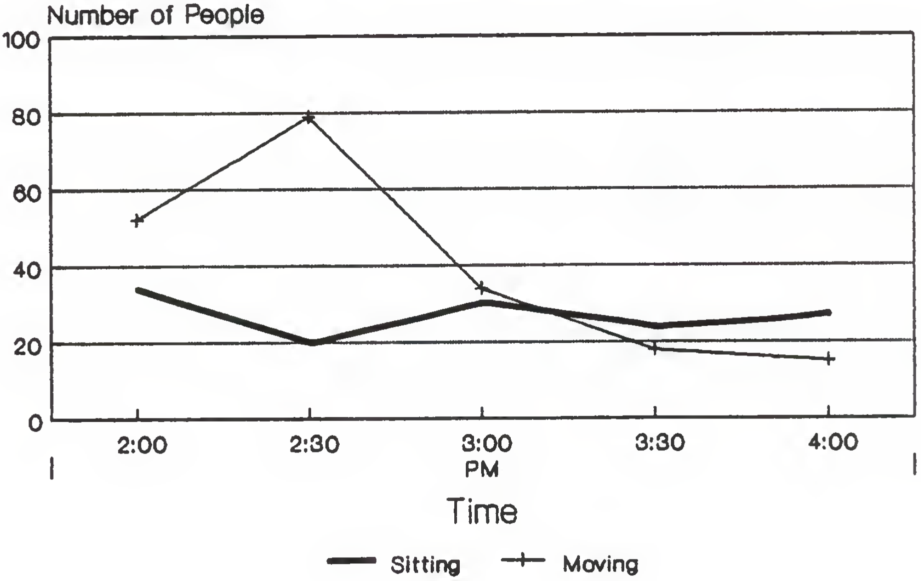
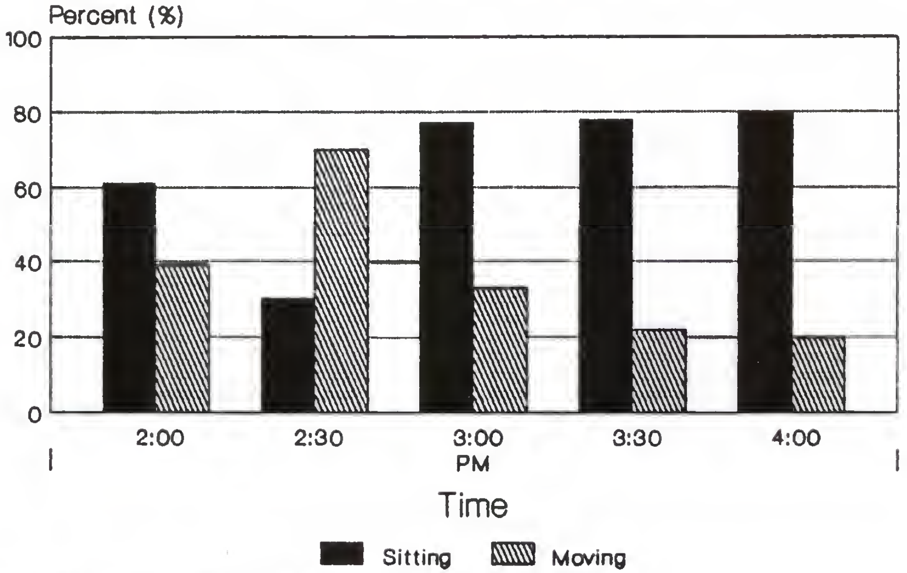


Figure 4.3a

# PEOPLE - SITTING & MOVING

## Harborplace Study Area 1



Weekend Use Behavior Mapping Data

## Harborplace Study Area 2

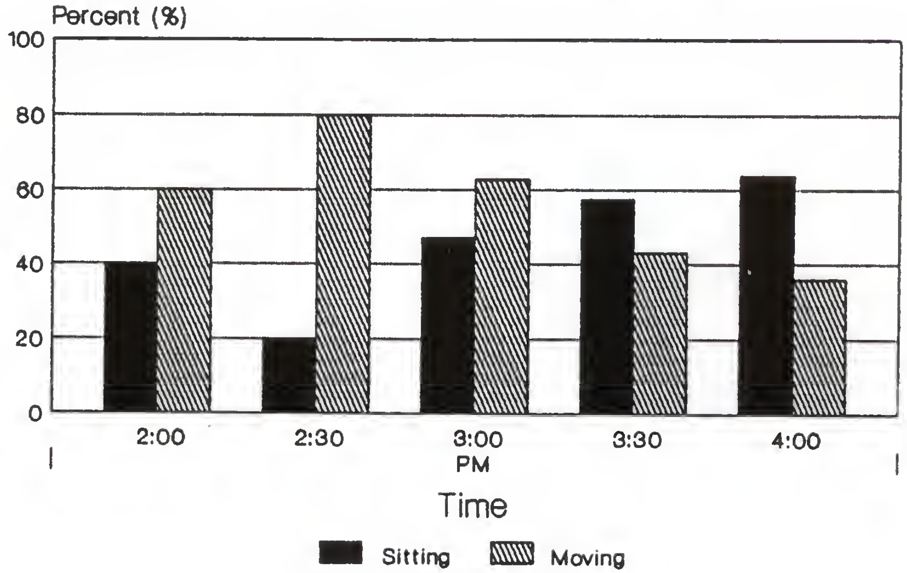
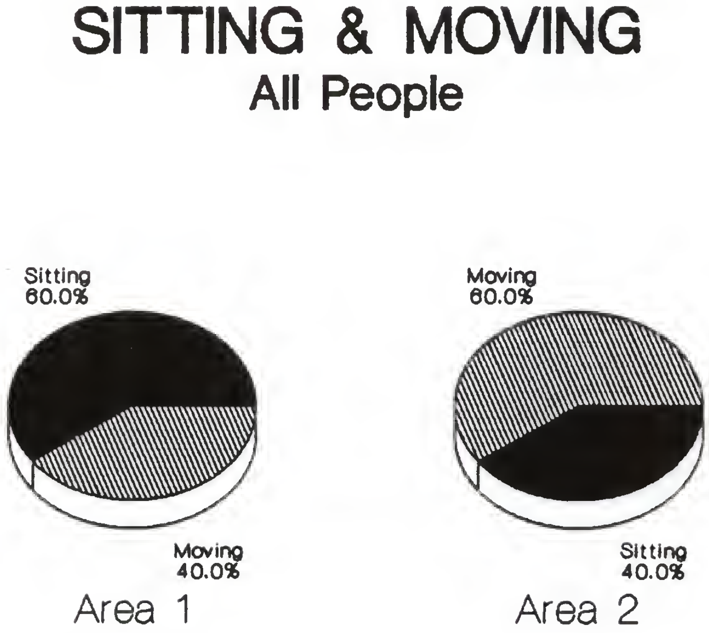


Figure 4.3b

Pie Graph -- Total Percentages of People Sitting and Moving



Numbers are percentages of all people

## Table 4.4 and 4.4a

TABLE 4.4 Activities of Sitting and Moving Per Unit Time

| DESCRIPTION | 2:00 P.M. | | 2:30 P.M. | | 3:00 P.M. | | 3:30 P.M. | | 4:00 P.M. | | TOTALS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 |
| Sitting | 39 | 34 | 26 | 20 | 41 | 30 | 29 | 24 | 44 | 27 | 179 | 135 |
| Moving | 25 | 52 | 63 | 79 | 12 | 34 | 8 | 18 | 11 | 15 | 119 | 198 |
| | | | | | | | | | | | 0 | 0 |
| | | | | | | | | | | | 0 | 0 |
| TOTAL | 64 | 86 | 89 | 99 | 53 | 64 | 37 | 42 | 55 | 42 | 298 | 333 |

TABLE 4.4a Description of Study Areas

| ITEM | Area 1 | Area 2 |
|---|---|---|
| Limits of Study Area | 22,082 sq. ft. | 18,921 sq. ft. |
| Length of Study Area | 320 ft. | 320 ft. |
| Width of Study Area | 55 ft. | 60 ft. |
| Promenade Width | 40 ft. | 32 ft. |
| Linear ft. of Seating | 1012 lin. ft. | 747 lin. ft. |
| Lin. ft. of seating per sq. ft. | 1/22 sq. ft. | 1/30 sq. ft |
| Lin. ft. of Comfortable Seating | 835 lin. ft. | 602 lin. ft. |
| Comfortable Seating per sq. ft. | 1/26 sq. ft. | 1/31 sq. ft. |
| Percent of Open Space to Plaza | 6% | 5% |

*Note: Seating includes all benches, steps, ledges, and planter edges.

Comfortable Seating is seating that is a minimum of a 12" width.

The data also indicates that study area 1 emerges as a more social space in terms of sittability. This area has more physical sitting space than area 2, containing 233 more linear feet of sitting space, eg: benches, steps and ledges. Whyte (1980b, p.30) devised a formula for sitting space which states: There must be 1 linear foot of sitting space for every 30 square feet of plaza space, with the best used plazas containing approximately 6-10% of open space.

Whyte's formula was used to determine the amount of sitting space contained within the two study areas. The two areas were similar in this category, therefore, the areas were aggregated in terms of "comfortable" seating. Comfortable seating can be defined as, sitting space that contains a 12" minimum width. This width was selected because it is the minimum width allowable for comfortable seating in outdoor design, typically one would like to have at least an 18" width. With this stipulation in mind, study area 1 showed adequate results in the amount of sitting space provided with a total of: 1 linear foot of sitting space per every 26 square feet (compared to Whyte's 30 sq. ft.), and 6% of open space per plaza space. Study area 2 showed inadequate results compared to Whyte's requirements for social space, accounting for only 1 linear foot of sitting space per every 31 square feet (versus Whyte's 30 sq. ft.), with only 5% of open space per plaza space (versus Whyte's 6%).

## Analysis of Individuals Versus Groups

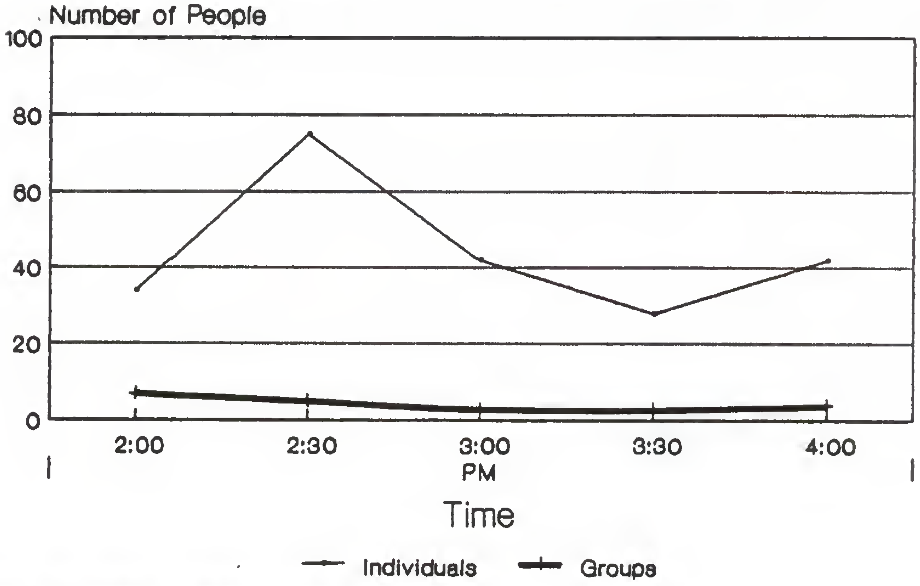
Individuals versus groups is also an important category to analyze because Whyte's (1980b) study revealed social urban space is inhabited more often by people in groups. "When people go to a place in twos or threes or rendezvous there, it is most often because they have decided to (p.17). There are a number of differences between the two study areas in relation to the number of individuals versus groups (Figure 4.4 and Table 4.5). However, it must be noted that the number of people who are traveling as individuals tend to be predominantly higher than those in groups, simply because a "group" is comprised of several people rather than the "individual" category where only a single person is documented.

Study area 1 has a high number of individuals compared to people in groups (see Figure 4.4 and 4.4a), with a dramatic rise occurring for individuals at the unit time period of 2:30 pm. Whyte (1980b) suggests that a high proportion of groups indicates selectivity. Also, the high number of individuals may be related to the activity near the study area. Several boats are shown docked along the promenade edge with young people partying, singing, talking and laughing. This activity is a natural attraction. Most likely, these people will be other individuals who are attracted to this type of activity. There may also be a correlation between individuals and age groups. There may be a relationship between individuals as young people and couples as adults.

Figure 4.4

# INDIVIDUALS AND GROUPS

## Harborplace Study Area 1



Weekend Use Behavior Mapping Data

## Harborplace Study Area 2

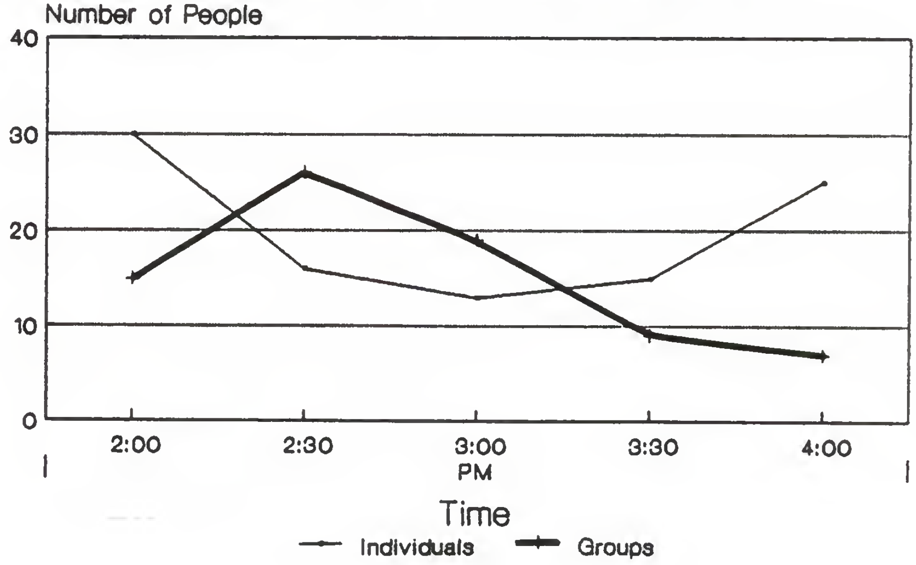
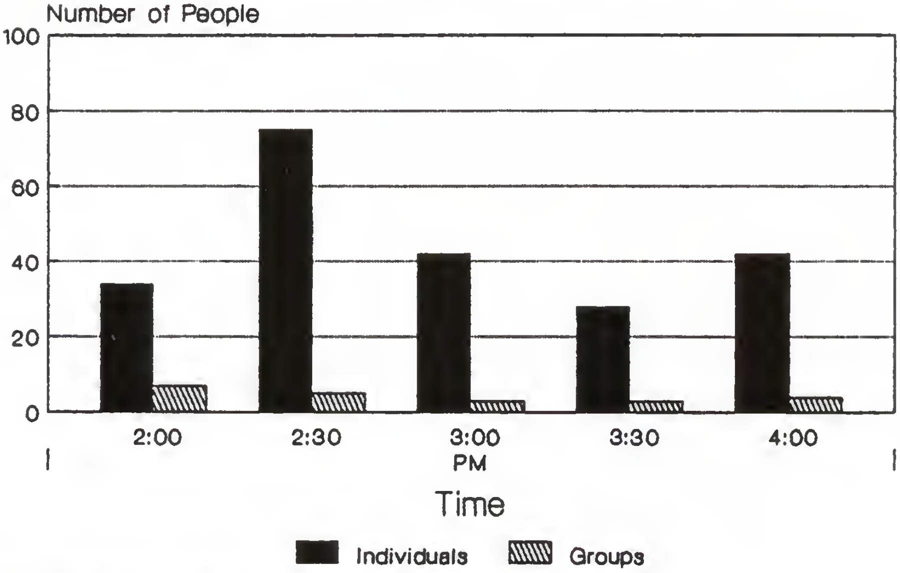


Figure 4.4a

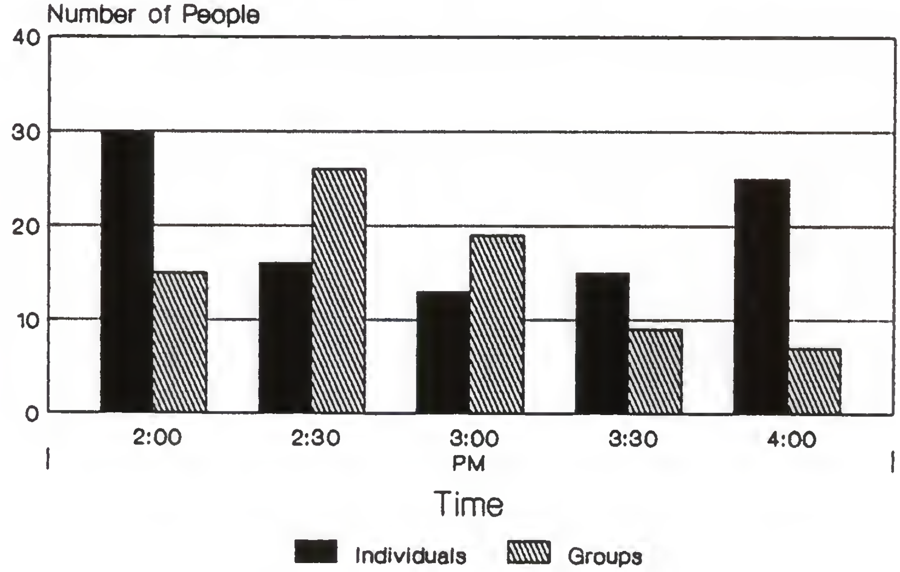
# INDIVIDUALS AND GROUPS

## Harborplace Study Area 1



Weekend Use Behavior Mapping Data

## Harborplace Study Area 2



## Table 4.5

## Individuals and Group Users Per Unit Time

TABLE 4.5 Individuals and Group Users Per Unit Time

| DESCRIPTION | 2:00 P.M. | | 2:30 P.M. | | 3:00 P.M. | | 3:30 P.M. | | 4:00 P.M. | | TOTALS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 |
| Individuals | 34 | 30 | 75 | 16 | 42 | 13 | 28 | 15 | 42 | 25 | 221 | 99 |
| Groups | 7 | 15 | 5 | 26 | 3 | 19 | 3 | 9 | 4 | 7 | 22 | 76 |
| | | | | | | | | | | | 0 | 0 |

This notion can be further researched by analyzing the age of the 100 people that were interviewed and is discussed in the next section entitled "Analysis of Interview Questionnaire Data."

There are similar patterns within the two categories of individuals and groups (Figure 4.4). The number of people who are in groups is approximately equal in size to those who are shown as individuals, with the only differences occurring at the 2:30pm and 3:30pm unit time periods. At this particular time period the group category increases while the individual category falls. This fluctuation may be related to the nearby activity of the waterfront. People were gathering in groups near the water-taxi area waiting for a ride to other on-site destination points (Appendix C, area 2). By the 3:00pm unit time period, the water-taxi has arrived and the groups of people, particularly families, are starting to board the taxi (Appendix C, area 2). Shortly thereafter, the number of individuals surpasses the number of groups, and the number of groups continues to decline until the last unit time of 4:00pm. It may be suggested that the people in groups travel more as a unit, therefore are more likely to use water transportation to get to other on-site activities.

Also, as in area 1, the potential age of the users within the space may relate to the type of use and activities in the space. As mentioned earlier, a number of people in area 2 were traveling in groups containing family members. Since people were predominantly observed as families, one draws the finding that the decline from 3:00pm to 4:00pm may be due to the fact that at this time, families may be thinking of starting for home to eat dinner. This correlation can be further studied by reviewing the interview questionnaire results, and this is discussed in the next section, "Analysis of Interview Questionnaire Data".

## Analysis of Interview Questionnaire Data

This section analyzes the questionnaire data that was collected from the 200 interviews conducted from May 30 to August 8, 1987. As previously mentioned in the "Methodology" chapter, the study was conducted during the weekends because this is when the two study areas are the busiest, therefore representing a typical weekend use. Data was collected through the use of an interview questionnaire.

### The Questionnaire

One hundred people were interviewed per study area, fifty men and fifty women in each. The questionnaire (see Appendix B) contained nineteen questions; fifteen short answer and four demographic questions. The questionnaire was designed so as to obtain input and feedback from the users of the two study spaces concerning the design of the space, their likes and dislikes, what they thought about the social atmosphere, and the activities they participated in. To allow for spontaneous answers, several questions were left open-ended. This can allow for a better discussion concerning how the users feel about a particular space or issues associated with it (Moser & Kalton, 1972).

The questionnaire, after review by the thesis committee, and then was approved by the members of the College of Architecture and Design Subcommittee of the University Committee for Research Involving Human

Subjects. The questionnaire was then pretested on several people within the Harborplace study site to see if the questions could be easily understood by the users. After the pretest was administered, the questionnaire was revised with only minor changes to word phrases. The next step was to administer the questionnaire through the process of a personal interview.

### The Interviews

The interviews were limited to only those users who were in the two study areas at the time of the interview. The randomly selected participants were required to be a minimum age of seventeen. Each interview lasted for approximately 5-10 minutes based on the gregariousness of the respondent. Approximately 99% of the people approached for the interviews consented to take the questionnaire. People in both study areas were interviewed during the same days so as to maintain similar conditions of weather.

## Analysis of Interview Questionnaire Results

This section does not attempt to analyze all responses to the questions asked, but rather focuses on the questions that are pertinent to the theory of social urban space. As mentioned earlier in the "Methodology" chapter, the questionnaire results were analyzed with a Reflex computer data base so information could be recorded and cross-tabulated (see Appendix D). Several questions are of interest to a better understanding of social space (Appendix E).. The first area of focus was what prompted people to come to Harborplace.

### The Demographics of the Users

Several interesting issues were analyzed within the category of demographics. Peoples' age, gender, education, and occupation were analyzed. Within these specific categories, exluding the preset conditions of gender, 50 men and 50 women in each area, there were various findings for each study area. However, we will only analyze the demographics of peoples age, since this can tell us who the users are, and in which space do they gather. In general, the ages of the people in the two study areas were slightly different. The people in area 1 were younger, between the age of 20 and 30, versus area 2 where the peoples age ranged between 30 and 60, (see Figure 4.5). This may be due to the specific activities and functions of how each space is used and is indicated later in this section in "Likes and Dislikes".

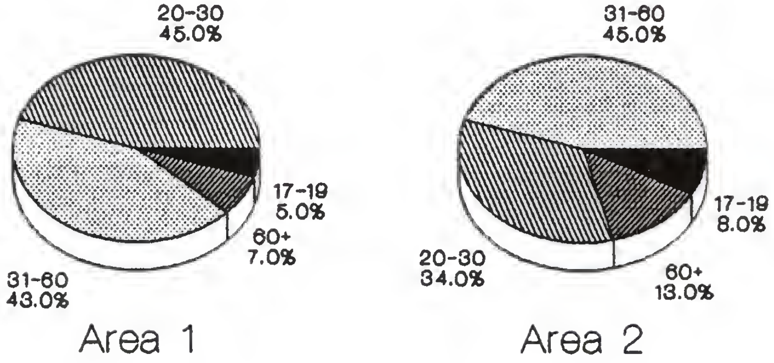
### Why People Came to the Two Study Sites

The interviews included a cross-section of different user groups. These included residents of Baltimore, visitors and workers. It is interesting to note that the responses to Question 1 were similar for both study areas. The highest proportion of users said they came to Harborplace because of the waterfront atmosphere, with a 39% response in area 1 and a 37% response in area 2 (Appendix B & E, and Figure 4.6).

Figure 4.5

# AGE OF USERS

## Questionnaire Data

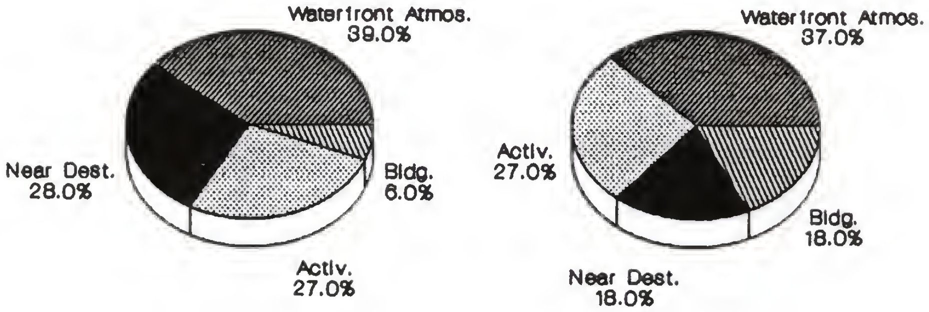


Numbers are percentages of all people

Figure 4.6

# WHY PEOPLE CAME

## Questionnaire Data



Area 1

Area 2

Numbers are percentages of all people

It can also be noted that the two areas were close in terms of the second highest response. Twenty-eight percent (28%) of the users in area 1 said in addition, the attraction of a nearby destination was what brought the users to this space, versus the users of area 2, who replied by 27% that is was the on-site activities that brought them to the space.

The responses to Question 1 are so similar that it becomes impossible to point to a specific difference between the two study areas, however, the fact that area 1 was associated with the response of a nearby destination, and area 2 with a response of an on-site activity is somewhat indicative of the nature of the two study areas. Area 1 has been previously identified as a type of destination point within itself due to its distant location from other activity nodes, whereas area 2 has become identified as a thoroughfare because it is located near various on-site activities. The key here is location. As previously stated, Whyte's (1980b) study points out that location is the key to design for sociable space. As we have seen with Question 1, the theoretical implications of how each space is used is verified by the answers to this question.

## How Often People Came to Harborplace

When people were asked "How often do you come to the inner harbor"?, responses were similar for each area. The users indicated that the majority of the time they visit Harborplace several times a year, 34% in area 1 and 41% in area 2. The second highest response, (not including those who replied "not applicable") signifies that people visited Harborplace on a monthly basis. These answers are not to be confused with the frequent use of the two study spaces, but rather demonstrate the typical use of Harborplace. Therefore, one can conclude that the nature of a waterfront environment, such as Harborplace, implies a type of recreational leisure space where people take time out to purposely plan to visit the area. The next question analyzed deals with the environment of Harborplace and its association with the waterfront.

## Harborplace and the Waterfront Character

In Question 4, when people were asked if they would come to Harborplace if it was not located on the waterfront, they responded with an overwhelming "No", for a total of 79% percent in area 1 and 73% percent in area 2. This response was the dominant answer to this question therefore indicating that it was the attraction of the waterfront that lured people to Harborplace. Water, for a large part is the main attraction of Harborplace. What is interesting to note here, is that Whyte lists water as a fourth design criteria, with a subheading of "Other Less Important Factors". He feels that water is not a main criterion in association with his other three elements of social space, however when a social space is primarily located near a large body of water, the water becomes the dominant feature within the space. Hence, we see that water is an important design element to consider when dealing with the social space of urban waterfronts.

## Rating Various Points of Harborplace

### Social Atmosphere

The findings generally show that both areas rated very high in social atmosphere. On a scale of 1-5, most people rated the social atmosphere of the two spaces with high marks of 5, 40% in area 1 and 50% in area 2. In addition, the second highest rating indicated that a mark of 4 was appropriate, for a total of 31% response in area 1 and 36% response in area 2. On the whole, both areas seemed to be sociable spaces as determined by these marks, but these marks can be further compared to other elements such as: activities, views, and food.

### Mix of Activities, Views and Food

These categories were similarly rated on a scale of 1-5, with a majority of all three categories possessing high ratings of 4 and 5. Specifically, when one reviews each category individually, area 2 shows a slightly higher percentage of ratings than area 1, but these differences are relatively insignificant. A majority of the people particitpated in the various activities offered, but during the interview it was noted that people in area 1 were unaware of several of the adjacent activities. This may be due to the idea presented earlier, that area 1 is more of destination point within itself somewhat unrelated to nearby activities because of its location.

Other important elements to consider are views and people-watching. Spaces with good views will probably attract more people, thereby creating a more sociable space since researchers such as Whyte (1980b) and Rutledge (1970) and Gehl (1980) suggest people attract people.

Views were considered of high importance to the users in both study areas, for a total of 55% response in area 1 and a 65% response in area 2.

In conjunction with the views of Harborplace, similar responses were found in the ratings for food. Area 1 and 2 rated food very high, with a response of 49% in area 1 and 47% in area 2. The second highest rating was that of a 4. Overall, food is an important social element as suggested by Lennard (1984). Cafes, restaurants, coffee houses and other places that offer refreshment are essential for they help to sustain sociable character. This question related to the question of "Do people eat at Harborplace"? When asked this question, people responded with an overwhelming "Yes", for a total response of 95% in area 1 and 88% in area 2. Both areas were similar in percentages however, when we look further at where they people eat we note several differences. The majority of the people in area 1 congregated to nearby food courts, whereas people in area 2 dined in restaurants. These preference differences are most likely related to the age of the users within each space.

As indicated earlier in "demographics", the users in area 1 ranged between a slightly younger group of 20 - 30, whereas area 2 contained a slightly older group of 30-60. Therefore, younger people preferred the hustle and bustle of the fast food service offered in the food court, and older people prefered the more relaxed atmosphere of a restaurant. This indicates to the designer that one must plan for a variety of choices in order to attract all types of users to a space.

## Likes and Dislikes

When asked what people liked most about the Inner Harbor, most people mentioned they enjoyed the waterfront atmosphere. Both areas were tied within this category for a total response of 53% for each area. This strengthens the idea that water is an important design element within the social space of waterfronts. The second highest response was on-site activities, for a total of 41% in area 1 and 36% in area 2. Other elements such as on-site buildings and easy accessibility were rated very low in terms of what people liked most.

It is also interesting to note what people disliked about the Inner Harbor. When asked what people enjoyed least about the Inner Harbor, a majority of the respondents had no response to this question indicating that the Inner Harbor had a positive atmosphere in general. However, with further review one notes that the second highest response to this question was the "crowded atmosphere". This is particularly interesting to note because Whyte (1980b) believes that what people say and what people do are two different things. We can analyze Whyte's theory by looking at Question 7, "Do you like to sit where you can observe and watch others?". The number one response to this question was "Yes", for a total of 97% in area 1 and 93% in area 2. A paradox is shown here implying that if people enjoy watching other people, one needs crowds, since Whyte (1980b) indicates that spaces that are void of people attract undesirable users such as winos.

In overall, one can determine that the findings in this section serve as good indicators for social spaces that facilitate sociability and activities. Therefore, these findings can be used to derive important conclusions for the design of urban watefronts in relation to social space. The case study site of the Baltimore Inner Harbor, specifically Harborplace has been rated a success by many critics. However, the important issue here is to analyze how one can take a successful design, such as Harborplace and further evaluate its design in order to improve other waterfront designs. The next chapter, "Conclusions", focuses on several ideas that may be helpful to consider when developing an urban waterfront design, specifically suggesting improvements for Baltimore's Harborplace in terms of social urban space for people.

# CHAPTER V CONCLUSIONS

*****************************************

The following conclusions are based on a comparison and synthesis of the findings in chapter four. In general, the hypotheses stated in the "Introduction" are confirmed. They were:

(1) Study area 1 may work better than study area 2 based on William Whyte's design criteria for social urban space.

(2) Qualtities unique to each study area may indicate areas of social urban space that reinforce Whyte's argument, as well as lead to areas of social space his argument did not predict, since none of his study areas included waterfronts.

The conclusions derived from the findings focus on a critique of William Whyte's design criteria in relation to urban waterfront design of Baltimore's Harborplace. From these conclusions, general design guidelines are suggested for design improvements for Baltimore's Harborplace.

Although this case study was site specific to Baltimore's Harborplace, these conclusions are not limited to this site and may likely be applied to a variety of other urban waterfront projects. The following is a description of the two issues outlined above. The implications of each finding are listed in two sections. The first section deals with William Whyte's design criteria and is then followed by a second section which includes general design guidelines for waterfront design.

## William Whyte's Design Criteria

The following conclusions concern the urban waterfront design of Baltimore's Harborplace, and specifically address Whyte's (1980b) study for social space, and are discussed in terms of three specific design criteria, they are: 1) location of plaza, 2) street-plaza relationship, and 3) sittability. The first area of interest is that of plaza location.

### Location

As stated earlier, Whyte (1980b, p.57) believes the plaza must be located near large populations of people, with the best locations along streets or street corners with heavy pedestrian flow, near shopping and restaurants. Location is a major factor in the sociability of space. The findings of this study are parallel to those found by Whyte, and show that because of critical location, both study spaces are rather social spaces. In general, it has been stated that area 1 serves as an on-site destination point within itself, whereas area 2 is used as a space of transition, moving people from one on-site destination to another. The behavior patterns of these two spaces are due to their location. Area 1 is closer to nearby activites than area 2.

Another facet of location is nearness of the social space to the waterfront. In terms of design, one should consider how to determine how close a plaza should be located to the water's edge. As found in the behavior mapping, the closer the plaza is to a water's edge, one that has considerable activity related to it, the greater the fluctuation of users within the space. The number of users within the space at any one time fluctuates, creating an inconsistent social space, very much like a party that starts and stops. There is a feeling of distraction within the space, thereby possibly stopping potential users from approaching the space. Therefore, one can say that a social space must not occur too close to waterfront activity, a good distance, at least for the Inner Harbor, seems to be a minimum of a 40′ promenade width. This measurement is based on the width of the promenade in area 1. This idea of plaza location can be further evaluated in the second criteria entitled "Street-Plaza Relationship".

Conclusions for location of plaza and surrounding activities

1. The location of activities should be concentrated near one another. This provides activities for all ages, and allows the user to visually see what is available to them for entertainment. As noted through interviews, a long distance between attractions deterred people from using all the activities provided for their enjoyment.

2. Be considerate of scale within the design of the waterfront space, keep away from large skyscrapers that may disrupt views. Also, provide plenty of walking distance between existing buildings and the water's edge, approximately 40′ width of promenade space. People responded with comments such as "The World Trade Center is out of scale, it separates areas too much, and is a barrier between walking elements."

## Street-Plaza Relationship

Whyte (1980b, p.57) strongly believes that "The area where the street and plaza or open space meet is a key to the success or failure of a space. Ideally, the transition should be such that it is hard to tell where one ends, and the other begins." For this discussion, we will consider the "promenade" to be the street since this is where the people circulate, better known as an internal street. As previously indicated, the promenade in area 1 is slightly larger in width than in area 2.

The additional space within area 1 provides the user with a chance to withdraw from the main stream of the promenade, thereby creating social eddies along the major circulation paths. On the other hand, the promenade in area 2 is smaller in width by approximately eight feet. This distance, as discussed in the "Introduction", discourages social interaction due to its narrow dimension. We can further define this theory by reviewing Whyte's analysis of pedestrian circulation.

Whyte (1980b, p.55) points out that people tend to stand in the middle of heavy pedestrian flow of circulation paths, not on edges. However, the findings, as revealed through the use of behavior maps, show that Whyte's theory can be further refined in relation to urban waterfront design. The scale and intensity of use within the context of an urban waterfront design is generally greater than that of a typical plaza's use. Therefore, one can conclude that people will tend not to stand in the main stream of circulation paths, thereby indicating that the width of the promenade is important to social space. People will tend to use the edges of the promenade for social conversations and impromptu gatherings.

Whyte (1980b, p.58) also states that the relationship between the street and plaza should stimulate impulsive use by: (1) clear sight lines..."If people do not see a space, they will not use it", and (2) beckoning devices -- eg., graceful stairs, arching trees, entrance markings, etc, (p.57-58). This theory may be true, but, it is only partially applicable to urban waterfront design. It is true that clear sight lines are important, but beckoning devices are not necessary for the typical urban waterfront since people are already in the space, and do not have to be attracted into the space. In conclusion, the promenade serves as a street -- an internal street -- containing a variety of users, bringing them into and through the urban waterfront space itself. Once these users have been brought into the space, Whyte (1980b) believes the issue of seating is important as we see in the third criteria, "Sittability".

### Conclusions for Street-Plaza Relationship and Circulation

1. Provide information booths along major circulation paths, therefore, this aids in the user's knowledge as to what activities are available to them. Several people responded that they had "no idea of what's going on if you're not local", and they "did not know there was an information booth here". Interviews and observations showed that information booths located in secondary circulation paths were not used.

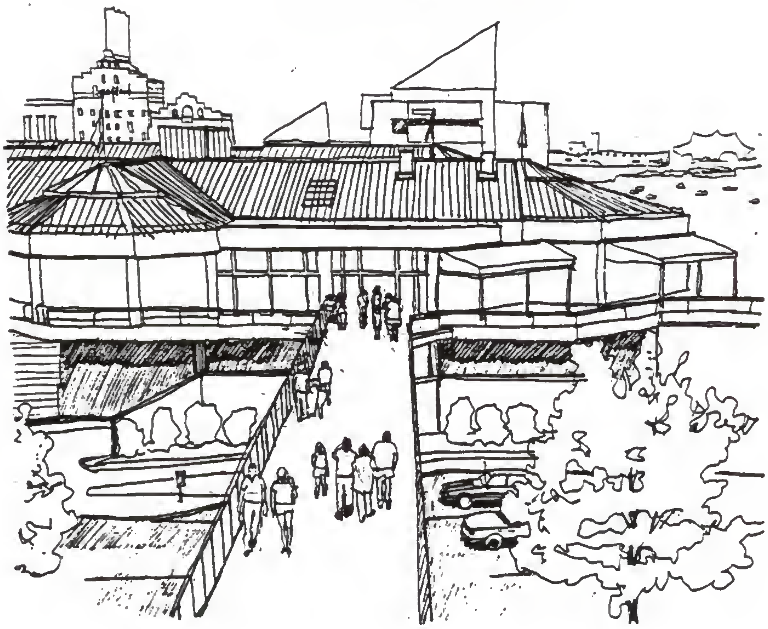
2. Provide more variety of people-oriented events and exhibits along the promenade, eg. crafts, seafood festivals, vendors, boat races, etc. People responded with thoughts like "once you see it, that's it!", and "have more activities all along the promenade".

3. Provide more life rings along the promenade, not handrails. People responded with comments such as "Handrails tend to give parents and kids a false sense of security, thereby attracting more kids to the edge of the water to play on the handrails".

4. Provide covered skywalks for inclement weather, this allow access from the parking lot to the waterfront pavilions and vice versa.

Figure 5.1

Covered Skywalk Design



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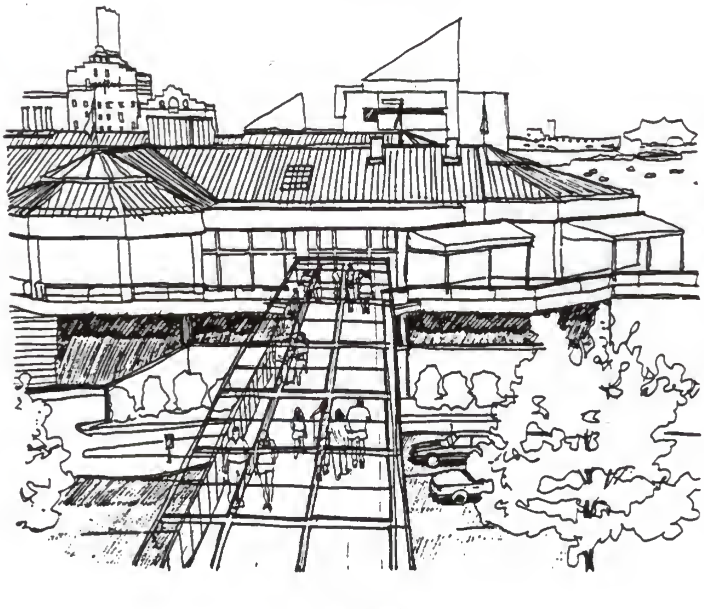

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### Sittability

Whyte (1980b, p.28) believes once the design of a space has attracted people, they can be held there by seating. Seating must be physically, and especially socially comfortable. Social comfort implies seating choice, eg., front, back, singles, couples, etc., and should be planned for people 'who will sit awhile'. This concept can be further subdivided into several categories that Whyte points out as being social indicators of space, they are: a) women versus men, and b) individuals versus groups.

#### Women versus Men

As stated in chapter IV, "Findings", the best-used plazas have a higher proportion of women. "Women are more discriminating than men as to where they will sit" (Whyte 1980b, p.18) If women are used as indicators of social space, then designers must plan spaces that will attract the female gender. As noted through observation, the spaces women preferred were those in the "back" behind the men, but still close to the action. Women also enjoyed sitting in clusters, therefore, spaces which provided corners were also very popular among women. In conclusion, designers must provide different levels of seating spaces, this will attract more women since women prefer sitting in back, away from the main street activity. This researcher feels there is a correlation between the two categories of women and men, and individuals and groups as presented in the next section "Individuals and Groups".

### Individuals and Groups

Whyte (1980b, p.17) believes the best-used plazas contain a higher portion of couples, and more people in groups. A higher proportion of groups indicates selectivity. It is this researchers opinion that there is a parallel between people who are in groups and people who are of the female gender. As shown through the observation mapping in chapter IV, women seemed to travel more in groups versus men who traveled more as individuals. Therefore, Whyte's theory is verified. However, his theory can be further refined by considering the age of the users within the two study spaces of Harborplace.

When one looks at the questionnaire results, one notices that the age groups of the two study spaces differ slightly. As previously stated, area 1 contains younger users ranging between the ages of 20-30 years, versus area 2 where the age group is older, ranging between the ages of 30 - 60 years. This correlation shows a relationship between individuals as young people and couples as adults. This indicates an extension to Whyte's (1980b) theory that if one bases the success of social space on couples or groups, one must also consider the ages of the users. **Therefore, if a space is sociable this researcher concludes that the space must attract all ages of users.**

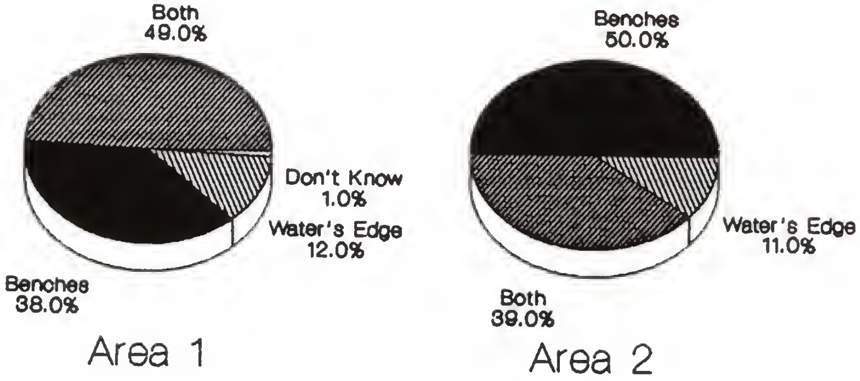
A variety of age groups can be attracted to a space if the space contains diversified activities. As mentioned in "Findings", the two study spaces differed in terms of impromptu activities. The activities in area 1 were predominantly related to the younger age group. For instance this area contained a large proportion of ledge seating near the water's edge, a place where party/recreational boats could pull up and dock. This general atmosphere attracted a younger crowd because of the liveliness of the water-related activity, and the abundance of informal seating near the water's edge. On the other hand, area 2 attracted a slightly older crowd because the sitting space was withdrawn from the water's edge, and the area contained more restaurants in which to sit and relax while enjoying views of the harbor. Therefore, conclusions indicate that the provision of activities within a space must relate to the type of user and the age group of the user.

This theory can also be supported by responses from the interviews. When asked if people preferred sitting on benches, or on the water's edge, the young people in area 1 responded with the answer of "both", whereas the older people in area 2 responded with the answer of benches. Therefore, one can draw the conclusion that a variety of seating attracts various age groups of users, eg. impromptu seating for the younger audience, and benches for the older audience (see Figure 5.2).

The conclusions presented in this section, were based primarily on the observation and behavior mapping analysis in the "Findings" chapter. The following section provides concluding statements based on the responses to the interview questionnaires for the two study areas.

Figure 5.2

SEATING PREFERENCES
Questionnaire Data



Numbers are percentages of all people

Conclusions for Seating and Social Space

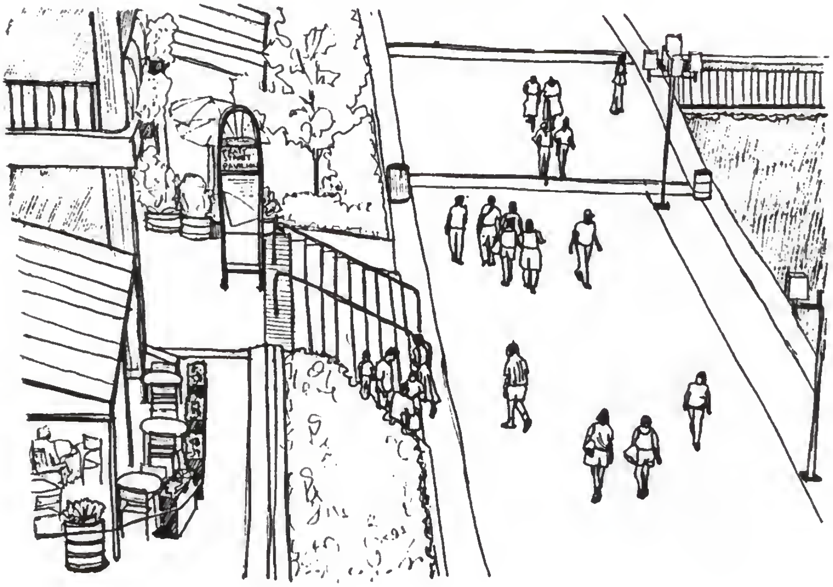
1. Provide views from all levels of user activity, and orient views towards the promenade and water-related activity.

2. Concentrate seating along the inside and outside edges of the promenade, and areas of high activity. This allows for informal people watching. Through interview and observation it was noted that people feel safe near high concentrations of other people, "everybody's doing the same thing, so I feel safe too" (Figure 5.3).

3. Add level changes along edge of promenade. This will provide a transition to the water and impromptu seating for boat watching and other water-related activities. Through observation it was noted that boat watching was a very popular activity, and people liked to admire what they could not afford to own themselves. "There must be a million dollar's worth of views here, and I don't have to pay for any of it" (Charles McCameron, HOK, 1987), see Figure 5.4.

Figure 5.3

Provision of Seating on Edges of Peomenade



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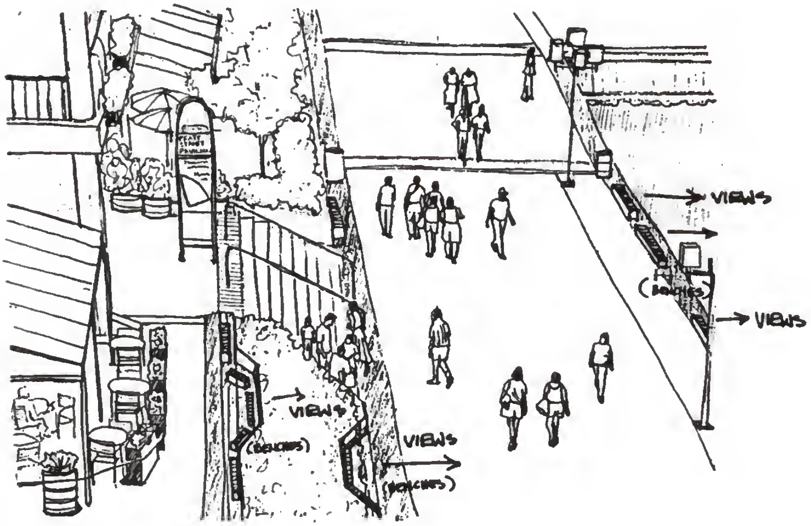

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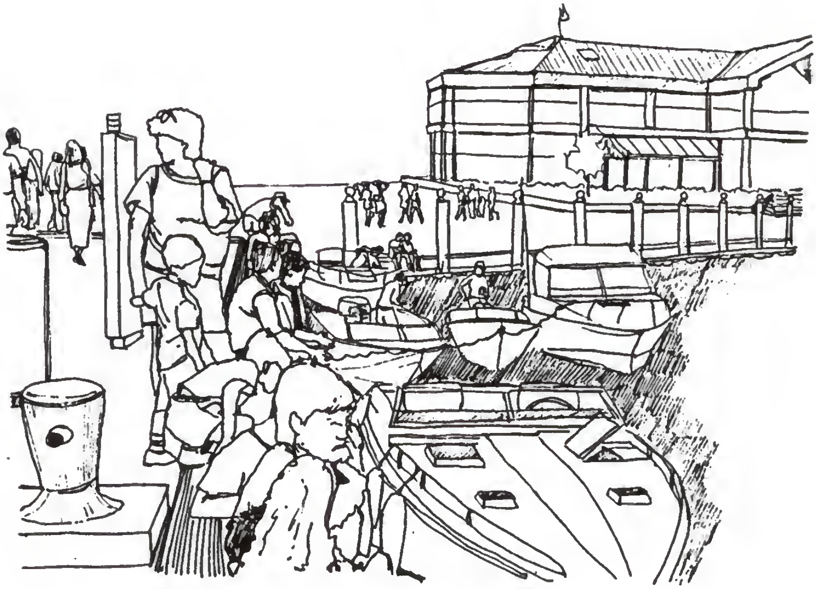
Figure 5.4

Transition of Level Canges to the Waterfront



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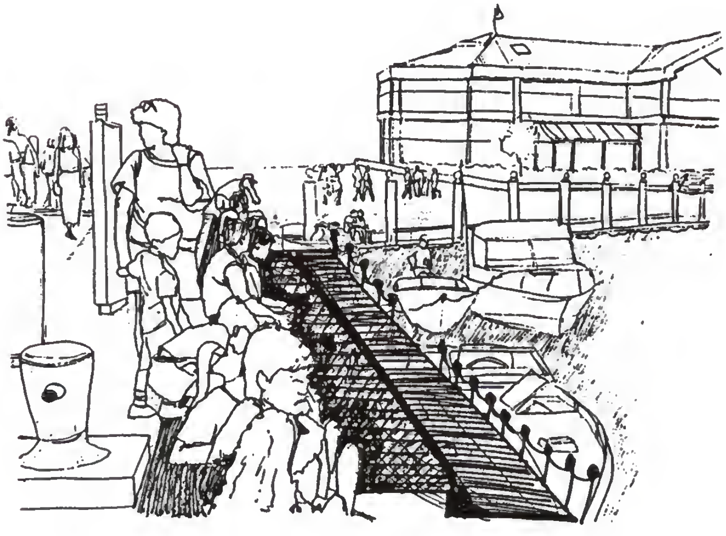

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4. Crowds indicate a well-designed space, but also indicate there may not be enough seating provided. Seating is crucial to the sociability of the space, and should be created so as to provide angular seating arrangements. This type of seating prompts social conversations between people. Linear seating tends to spread people out thereby discouraging sociability. "Crowds...What a nice problem to have"! (Monk Askew, Rouse Company, 1987)

People are the best source of critiques for evaluating the success of social space. These conclusions can be applied to a variety of waterfront projects, and may aide in future design of social spaces within the urban waterfront of the Baltimore Inner Harbor. Due to the grandness of the scope and scale of the Baltimore Inner Harbor, specifically Baltimore's Harborplace, this analysis is just one way to evaluate the social space of the waterfront design. Other issues discovered during this study need further research.

## Further Study

Urban waterfront design is an important issue occurring in many American cities along abandoned waterfronts. Since their exists only a small body of literature pertaining to urban waterfront design, several issues should be considered for further study. Three issues in particular come to mind, they are:

### 1. Additional Case Study Investigation.

This study was limited to one case study site, thus information from other case studies may provide additional results and conclusions for social space within the context of urban waterfront design. One could compare several case studies of different types of waterfront settings.

### 2. New Urban Waterfronts Versus Revitalized Waterfronts.

Several issues should be considered when approaching an urban waterfront design, they are: (1) to restore the existing waterfront and its character through revitalization, and/or (2) to renovate the entire waterfront with a new cosmetic, a new design; one that will blend in with the existing character of the waterfront surroundings. These issues can be compared for their advantages or disadvantages, and the problems involved.

### 3. Historical Considerations of Urban Waterfront Design.

Many American cities have waterfronts that are historical or are surrounded by historical sites, since the history of America began on the waterfront with protection by waterfront ports. Historically significant waterfronts need to have some type of guidelines for the urban designer to follow, a method of preservation, focusing on historical elements and how one can design with these elements.

# REFERENCES

Becker, F.C. (1973, October). A class-conscious evaluation: Going back to Sacramento's pedestrian mall. Landscape Architecture, pp.448-457.

Benkendorf, A. (1981, April). Planning for successful waterfront renewal. Environmental Comment, 14-16.

Billing, J.C. (1987, September-October). Baltimore's past harbors its future. Landscape Architecture, pp.68-73 & 80-83.

Black, J. Howland, L. & Rogel, S. (1983). Downtown retail development Conditions for success and project profiles. Washington, D.C.: Urban Land Institute.

Bradley, C. & Millward, A. (1986, Summer). Successful green space - do we know it when we see it? Journal of the Landscape Research, 11 (2), 2-4 & 8-9.

Braybrooke, S. (1974, Fall). Watching a people watcher. Design and Environment, 5(3).

Breen, A. & Rigby, D. (1984, May-June). Waterfronts in the 1980's: An overview. Journal of Housing, 41-42, 78-82.

Carr, S. & Lynch, K (1981). Open space: Freedom and control. In Lisa Taylor (Ed.), Urban open spaces (pp 17-18). New York: Rizzoli International Publications.

Clay, G. (1978, November). What makes a good square good? Landscape Architecture, pp.483-484.

Cook, R. S., Jr. (1977, October). Watching where you sit...and stand. Urban Land, pp.11-16.

Cowey, A. B. and Rigby, R. (1979, November). On the waterfront. Planning, 45, 10-13.

Davies, S. (1981). What do people do downtown: How to look at Main Street Activity. Washington, D.C.: National Trust for Historic Preservation.

Deasy, C. M. (1970, December). People watching-with a purpose. American Institute of Architects Journal, 54(6).

Eckardt, W.V. (1981). Reclaiming our waterfronts. In Lisa Taylor (ed.) Urban open spaces (pp 48-49). New York: Rizzoli International Publications.

Farbstein, J. & Kantrowitz, M. (1978). People in places. Englewood Cliffs, NJ: Prentice-Hall.

Francis, M. (1984). Mapping downtown activity. Journal of Architecture Planning and Research, 1, 21-35.

-----. (1987). Urban open spaces. In Zube, E. & Moore, G. T. (Eds.), Advances in environment, behavior and design (pp.71-106). New York: Plenum.

Harney, A.L. (ed.). (1987). Reviving the urban waterfront. Washington, D.C.: Partners for Livable Places.

Heritage Conservation and Recreation Service. (1980). Urban waterfront revitalization: The role of recreation and heritage (Summary). Washington, D.C.: Author.

Hester, R. T. Jr. (1975) Neighborhood space. Stroudsburg, PA: Dowden, Hutchinson & Ross.

Honore, W.H. & Jaffeson, R.C. (1980, September). Urban waterfront Revitalization: The HCRS/APA Seminar Series. PAS Memo, pp.1-3.

Jacobs, G. (1985). Clarifying the relationship between historical buildings and urban open space design: An evaluative technique and three case studies. Unplished master's thesis, Kansas State University, Manhattan.

Jacobs, J. (1961). The death and life of great american cities. New York: Random House.

Joardar, S. D. & Neil, J. W. (1978, November). The subtle differences in configuration of small public spaces. Landscape Architecture, pp.487-491.

Kaplan, McLaughlin, Diaz. (1985). Urban agoras. SanFrancisco: author.

Keith, R.C. (1982). Baltimore Harbor: A picture history. Baltimore, MD: Ocean World Publishing Company, Inc.

Laurie, I. C. (1978, November). Over-design is the death of outdoor liveliness. Landscape Architecture, pp.485-486.

Lennard, S. H. Crowhurst & H. L. (1984). Public life in urban places. Southampton, New York: Godolier Press.

Linday, N. (1978, November). It all comes down to a comfortable place to sit. Landscape Architecture, pp.492-497.

Lyle, J. T. (1970, October). People-watching in parks. Landscape Architecture, pp.31 & 51-52.

Lynch, K. (1981). Good city form. Cambridge, MA: The MIT Press.

Marcus, C. C. (1987, March/April). Outdoor spaces for living and learning. Landscape Architecture, pp. 52-61.

Moser, C. A. & Kalton, G. (1972). Survey methods in social investigation. New York: Basic Books.

Neighborhood Progress Administration /DHCD (1987). Fact Sheet: Baltimore's Inner Harbor Shoreline Attractions. (Available from CCIHM, Inc., 1444 World Trade Center, Baltimore, Maryland, 21202).

Moudon, A. V. (Ed.). (1987). Public streets for public use. New York: Van Nostrand Reinhold.

Peil, M. (1982). Social science research methods. Ibadan, Nigeria: Nigeria Publishers Services.

Robert Fuller Real Estate Market Report. (1987). Baltimore. Denver, CO: Author.

Rouse Company. (1987). Familiar in time and place (1986 Annual Report). Columbia, MD: Author.

Rutledge, A. J. (1981). A visual approach to park design. New York: Garland STPM Press.

Schwanke, D. (1987). Mixed-use development handbook. Washington, D.C.: Urban Land Institute.

Shirvani, H. (1981a). The urban design process. New York: Van Nostrand Reinhold.

-----. (1981b, August). Urban design through review process. Environmental Comment, 4-10.

-----. (1983, Spring). Georgetown waterfront. Urban Design International, pp.24-25.

Taylor, B. (1978, September). Cruising, porch-sitting, cycling...Torrence park designs fit neighborhood patterns. Landscape Architecture, pp.399-404.

Thompson, J. (1984, June). In search of the "real" city. Space and Society, 7, 26-43.

Whyte, W. H. (1980a). The humble street - can it survive? Historic Preservation, 32, (1), 34-41.

-----. (1980b). The social life of small urban spaces. Washington, D.C.: The Conservation Foundation.

-----. (1981). A guide to people watching. In Lisa Taylor (Ed.), Urban open spaces (pp 76-77). New York: Rizzoli International Publications.

Winkler, B. & Mahler, R. (1981). Pedestrian malls. In Lisa Taylor (Ed.) Urban open spaces (pp 54-55). New York: Rizzoli International Publications.

Wrenn, D. (1981, April). A view from here: Urban Waterfronts. Environmental Comment, 3.

-----. (1982). Urban waterfronts: Awash with controversy. Urban Land, 41, 14-23.

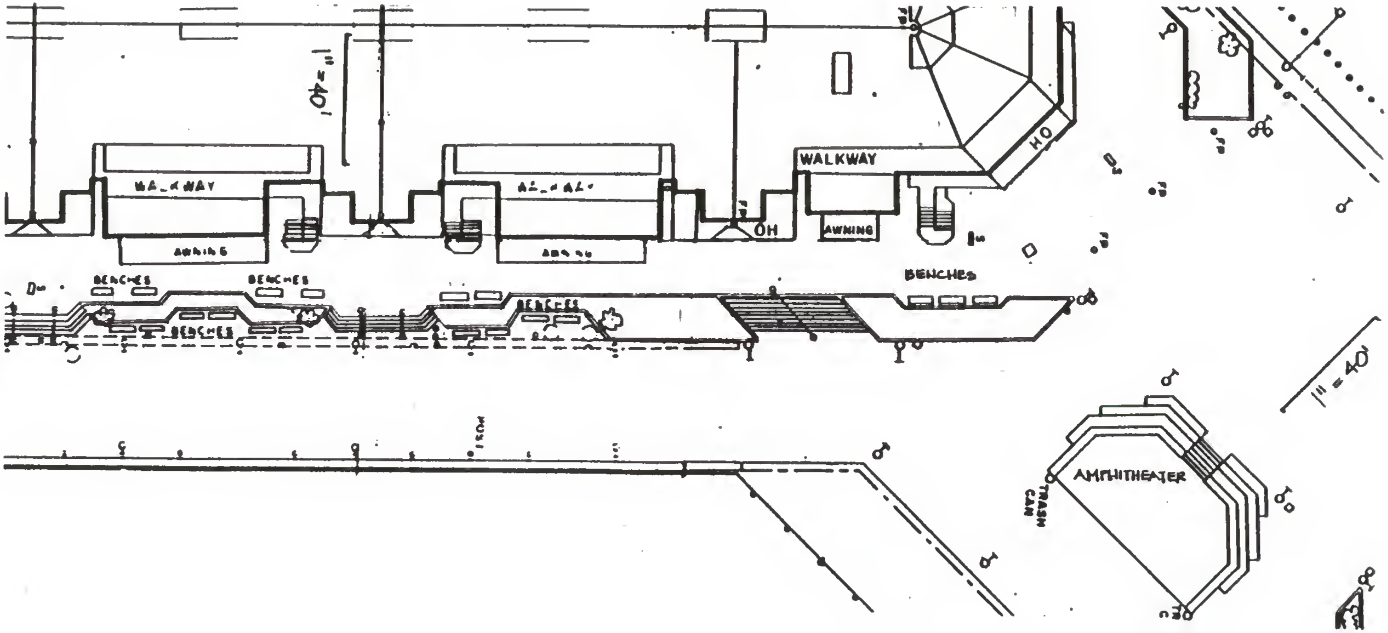
-----. (1983). Urban waterfront development. Washington, D.C.: Urban Land Institute, 219 pp.

Wylson, A. (1986). Aquatecture: Architecture and water. New York: Van Nostrand Reinhold.

Zeisel, John. (1981). Inquiry by design: Tools for environmental behavior. Cambridge: Cambridge University Press.

# APPENDIX A

## Behavior Mapping Data Form



SITE —— Harborplace

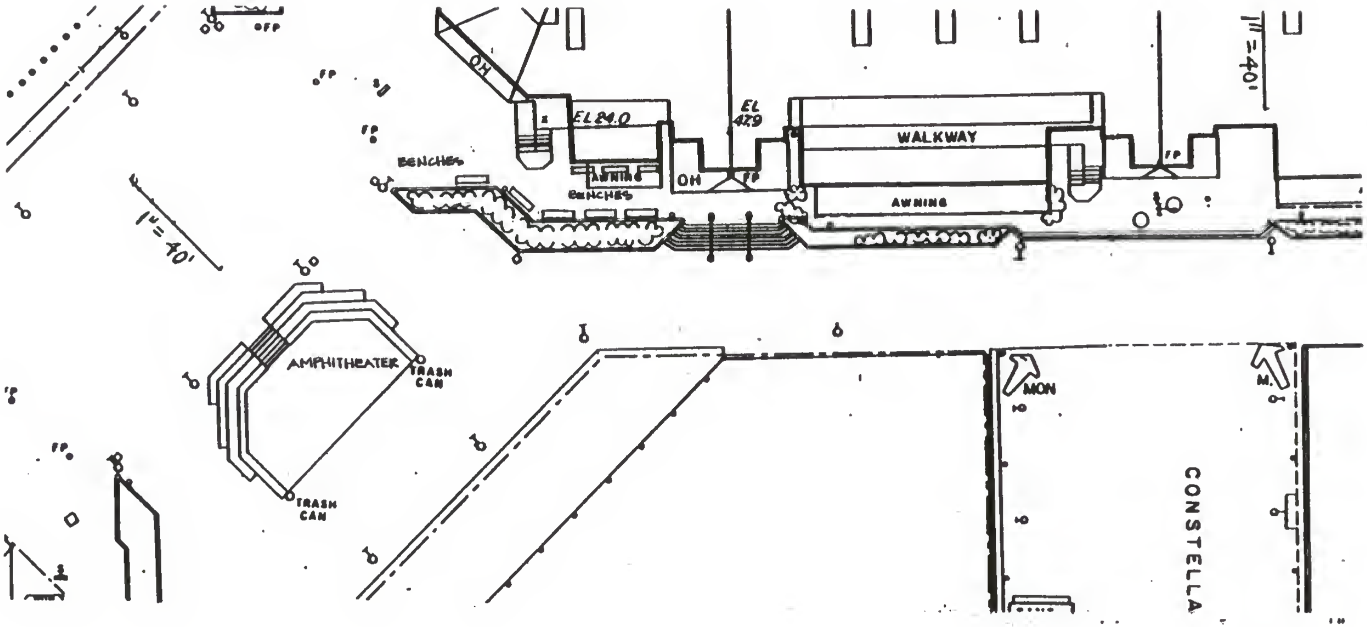
STUDY AREA — # ①

DAY (s) ——

TIME ——

KEY ——

# BEHAVIOR MAP FORM



SITE —— Harborplace
STUDY AREA — # ②
DAY (S) ——
TIME ——
KEY ——

# BEHAVIOR MAP FORM

# APPENDIX B

## Interview Questionnaire Form

## PERSONAL INTERVIEW FORM:

## URBAN WATERFRONT DESIGN STUDY

* * *

**Case study area:** Baltimore Inner Harbor

**Sub-study area:** ____________ (1 or 2)

**Date:** _______________ **Day:** (m/tu/w/th/f/sa/su)

**Time:** ________ (am/pm) **Participant #:** _______

"Hello. My name is Brenda Ocando, I am a graduate student in landscape architecture at Kansas State University, Manhattan, Kansas. I would like to ask your opinions concerning the Baltimore Inner Harbor. Your participation is completely voluntary and you may chose not to answer any questions that I may ask. Your responses to my questions will remain anonymous and should not place you at risk in any way. This research can help design professionals deal with the special problems of waterfront design. The interview will take less than 5 minutes."

Tab.

1. Why did you come to the Baltimore Inner Harbor today?
   __________________________________________________

2. Is this the first time you have been to the inner harbor?
   a. yes __________ (1) (go to #4)
   b. no __________ (2) (go to #3) ____

3. How often do you come to the inner harbor?
   a. daily __________ (1)
   b. weekly __________ (2)
   c. monthly __________ (3)
   d. other __________________________ (4) ____

4. Would you come to this place as often if it were not located on the waterfront?
   a. yes __________ (1) c. no _______________ (3)
   b. maybe __________ (2) d. don't know __________ (4) ____

5. Rate the inner harbor on a scale of 1-5 (5 being the best) for the following items:
   a. social atmosphere 1 2 3 4 5 ____
   b. mix of activities 1 2 3 4 5 ____
   c. the view 1 2 3 4 5 ____
   d. the food 1 2 3 4 5 ____

6. Do you eat here when you visit, if yes, where?
   a. yes ________ (1) ________________________________
   b. no ________ (2) ____

7. Do you like to sit where you can watch and observe others?
   a. yes ________ (1) c. maybe ____________ (3)
   b. no ________ (2) d. don't know ________ (4) ____

Tab.

8. When you sit to rest or eat do you feel comfortable with your surroundings?
a. yes __________ (1) why? ____________________________
b. no __________ (2) why? ____________________________
c. don't know____ (3) _____

9. Do you prefer sitting in chairs or along the granite bulkhead edge of the water?
a. chairs _______ (1)
b. water _______ (2)
c. don't know____ (3)
d. other ________________________________________ (4) _____

10. Do you feel safe without handrails on the waters edge?
a. yes __________ (1) c. don't know__________ (3)
b. no __________ (2) d. N/A ________________ (4) _____

11. Have you been to the harbor at night?
a. yes ________ (1) (go to #12)
b. no ________ (2) (go to #13) _____

12. What do you enjoy best at night?
a. the shops _______________ (1)
b. the restaurants _________ (2)
c. the atmosphere _________ (3)
d. other _________________________________________ (4) _____

13. What do you enjoy most about the Inner Harbor?
__________________________________________________

14. What do you enjoy least about the Inner Harbor?
__________________________________________________

15. If you could change this place, what suggestions would you have? ________________________________
__________________________________________________

16. What is your occupation? _________________________

17. What is your highest level of education?
high school ____(1) college ____(2) other ____(3) _____

18. Are you a tourist ___(1), resident ___(2) or worker?___(3) _____

19. What is your age?
teenager (17-19)____ (1) young adult (20-30)____ (2)
adult (30-60) ____ (3) retired (60-75) ____ (4) _____

"THANK YOU FOR YOUR TIME"

****************************************************************************

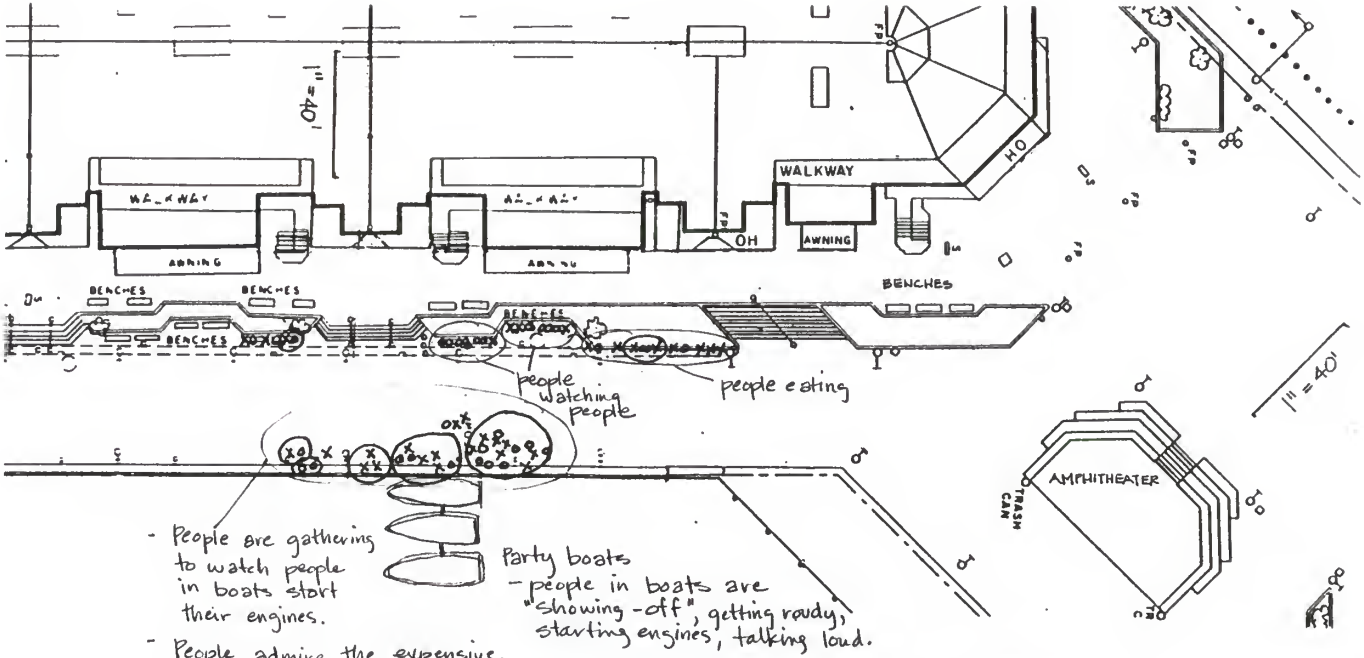
OBSERVATIONS OF INTERVIEW

SEX GENDER: _____ MALE (1) _____FEMALE (2) _____

# APPENDIX C

## Behavior Maps for Area 1 and 2

# Area 1 Behavior Maps



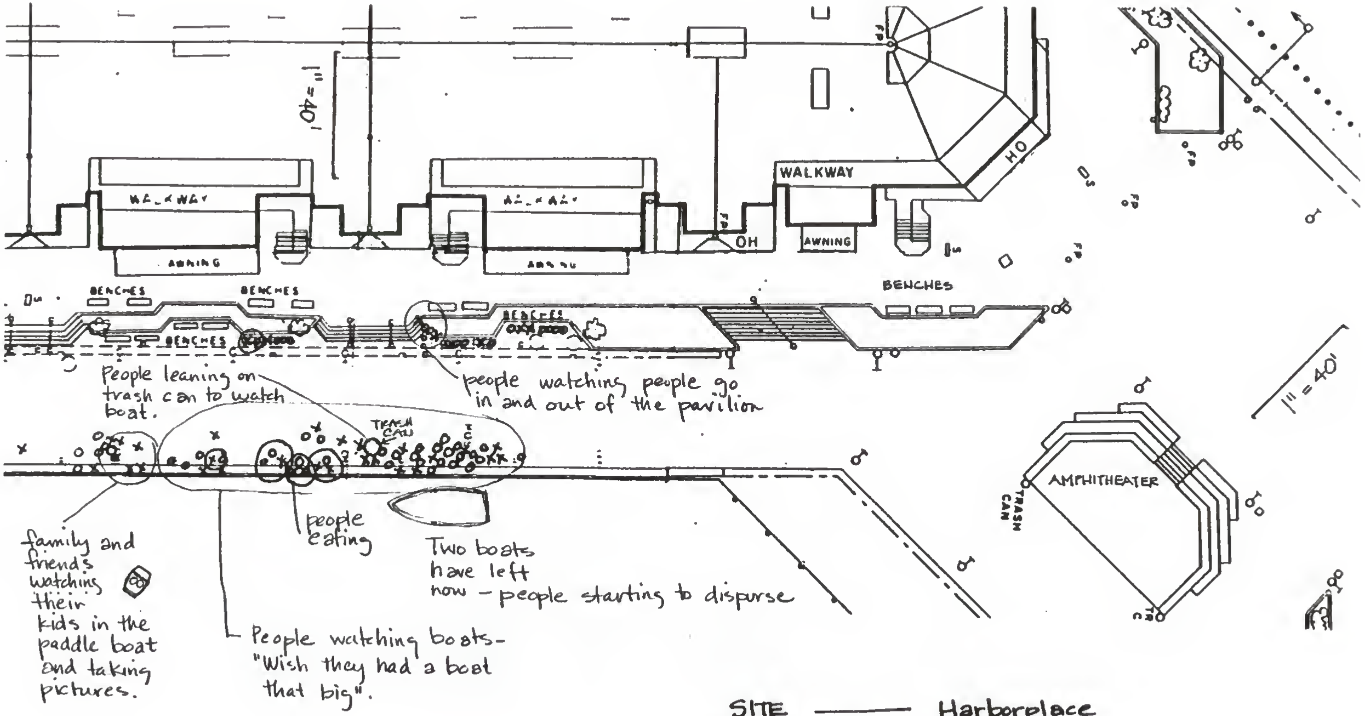
- People are gathering to watch people in boats start their engines.
- People admire the expensive boats they wish they owned.
- People pause, look, stay or slowly linger by watching boats.

Party boats
- people in boats are "showing-off", getting rowdy, starting engines, talking loud.

SITE —— Harborplace
STUDY AREA — #①
DAY(s) —— July 18, 1987
TIME —— **2:00**pm
KEY —— (o) WOMEN
(x) MEN

xo INDIVIDUALS
(xo) GROUPS

## BEHAVIOR MAP



People leaning on trash can to watch boat.

people watching people go in and out of the pavilion

family and friends watching their kids in the paddle boat and taking pictures.

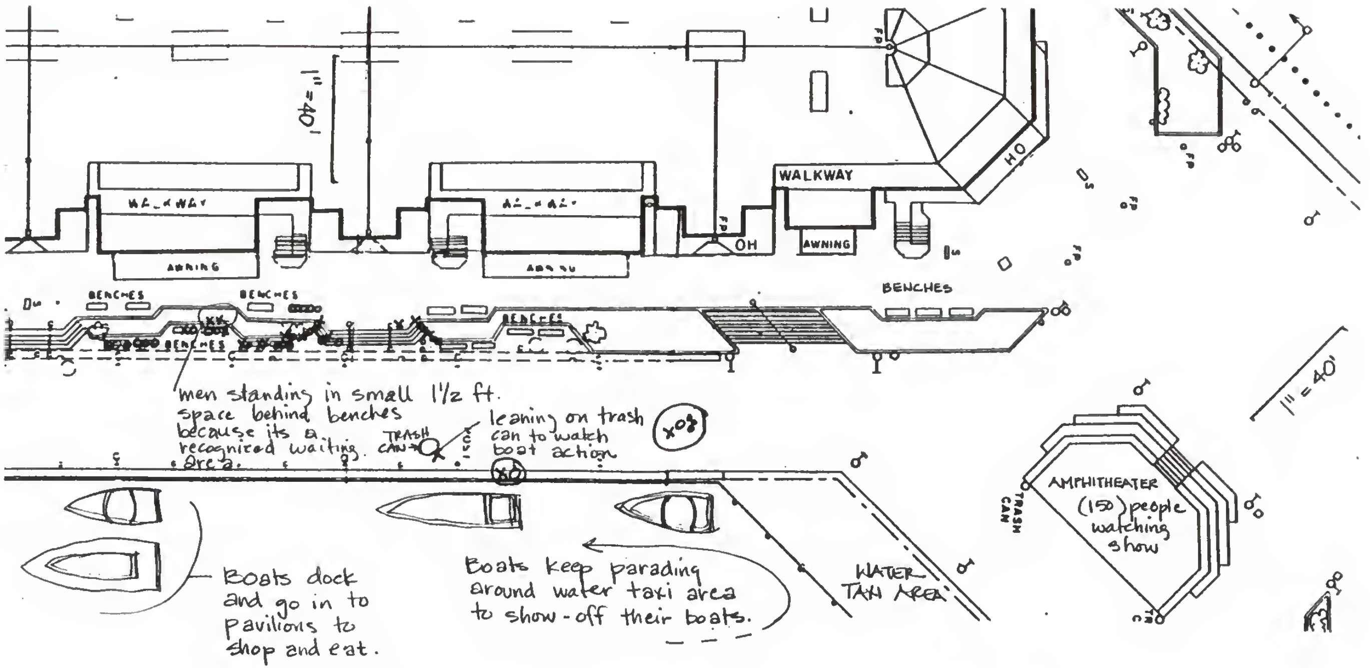
people eating

Two boats have left now – people starting to disperse

People watching boats– "Wish they had a boat that big".

# BEHAVIOR MAP

SITE ——— Harborplace
STUDY AREA— # ①
DAY (S) ——— July 18, 1987
TIME ——— 2:30 pm
KEY ——— (o) WOMEN
(x) MEN
x o INDIVIDUALS
(xo) GROUPS



men standing in small 1½ ft. space behind benches because its a recognized waiting area.

leaning on trash can to watch boat action

Boats dock and go in to pavilions to shop and eat.

Boats keep parading around water taxi area to show-off their boats.

(150) people watching show

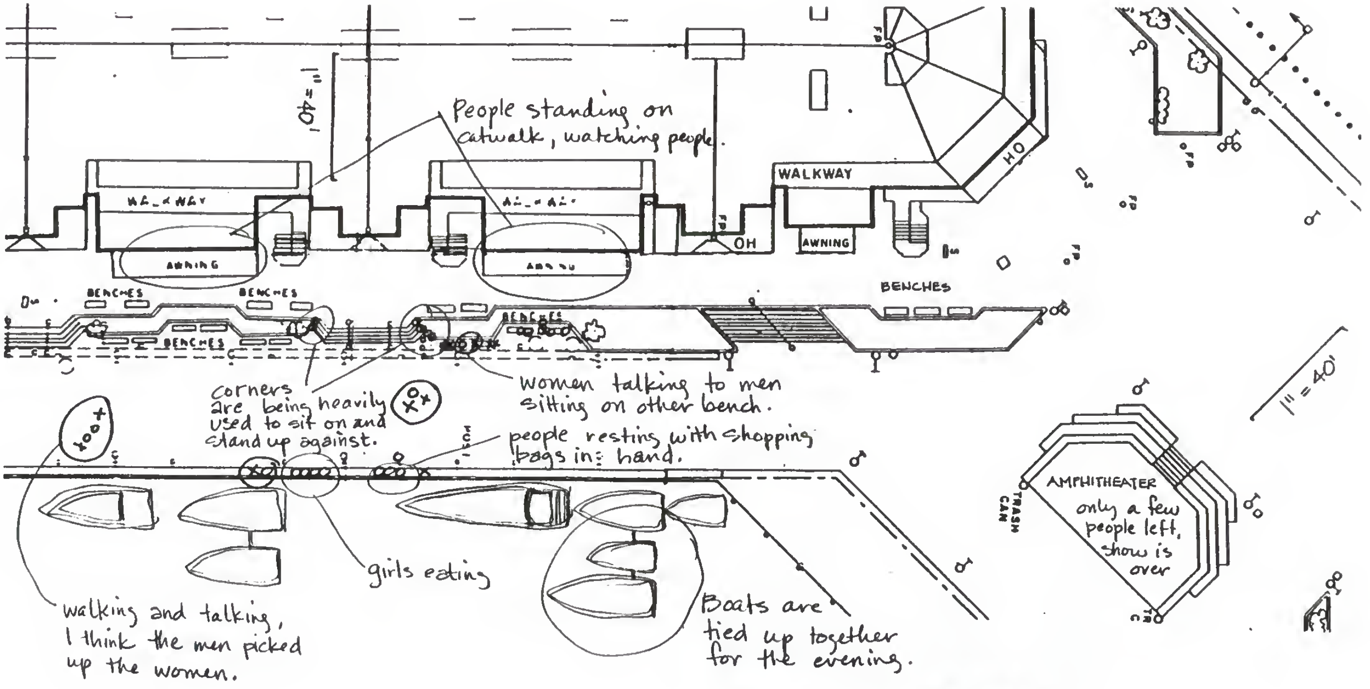
* Weather is hot, crowds have thinned.

* Someone took a picture of me sitting here as if I was something to capture, like an "artist".

* People have all gone to the amphitheater to watch the magic show.

SITE —— Harborplace
STUDY AREA —— # ①
DAY (S) —— July 18, 1987
TIME —— 3:00 pm
KEY —— (o) WOMEN
(x) MEN
x o INDIVIDUALS
ⓧⓞ GROUPS

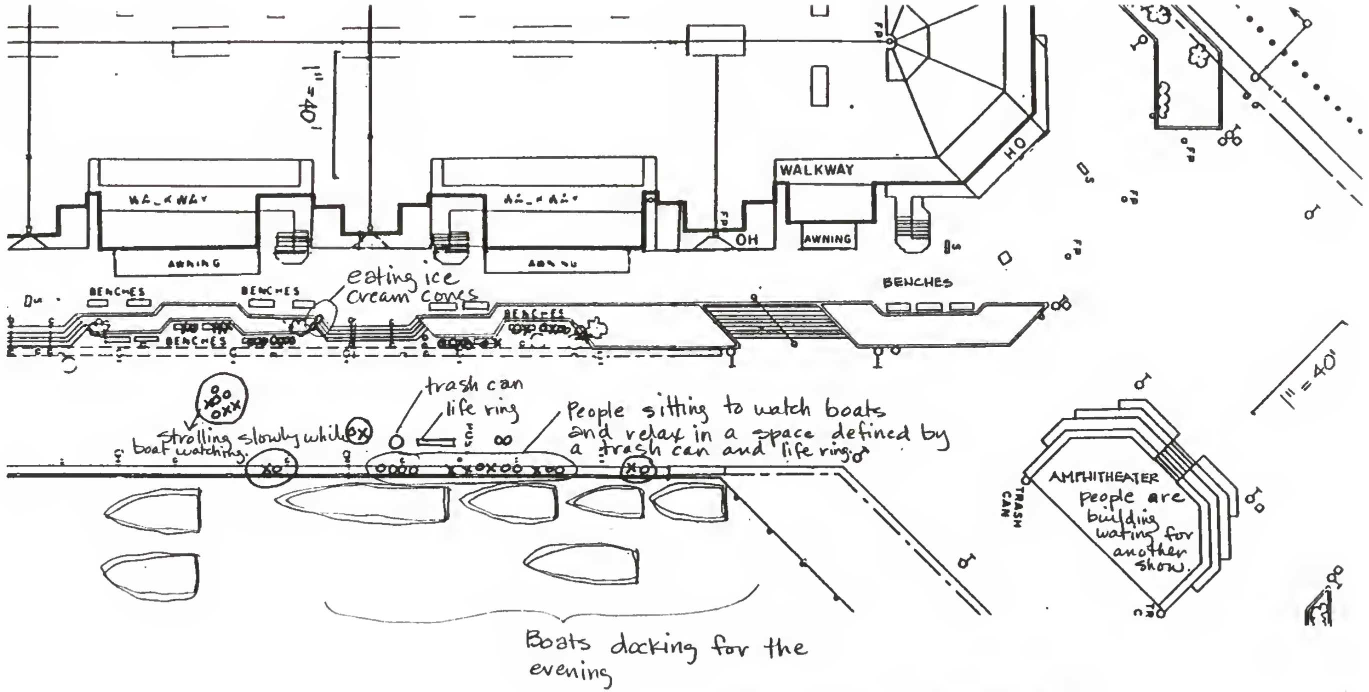
# BEHAVIOR MAP



People standing on catwalk, watching people.
1" = 40'
WALKWAY
AWNING
OH
FP
BENCHES
corners are being heavily used to sit on and stand up against.
women talking to men sitting on other bench.
people resting with shopping bags in hand.
girls eating
walking and talking, I think the men picked up the women.
Boats are tied up together for the evening.
AMPHITHEATER
only a few people left, show is over
TRASH CAN

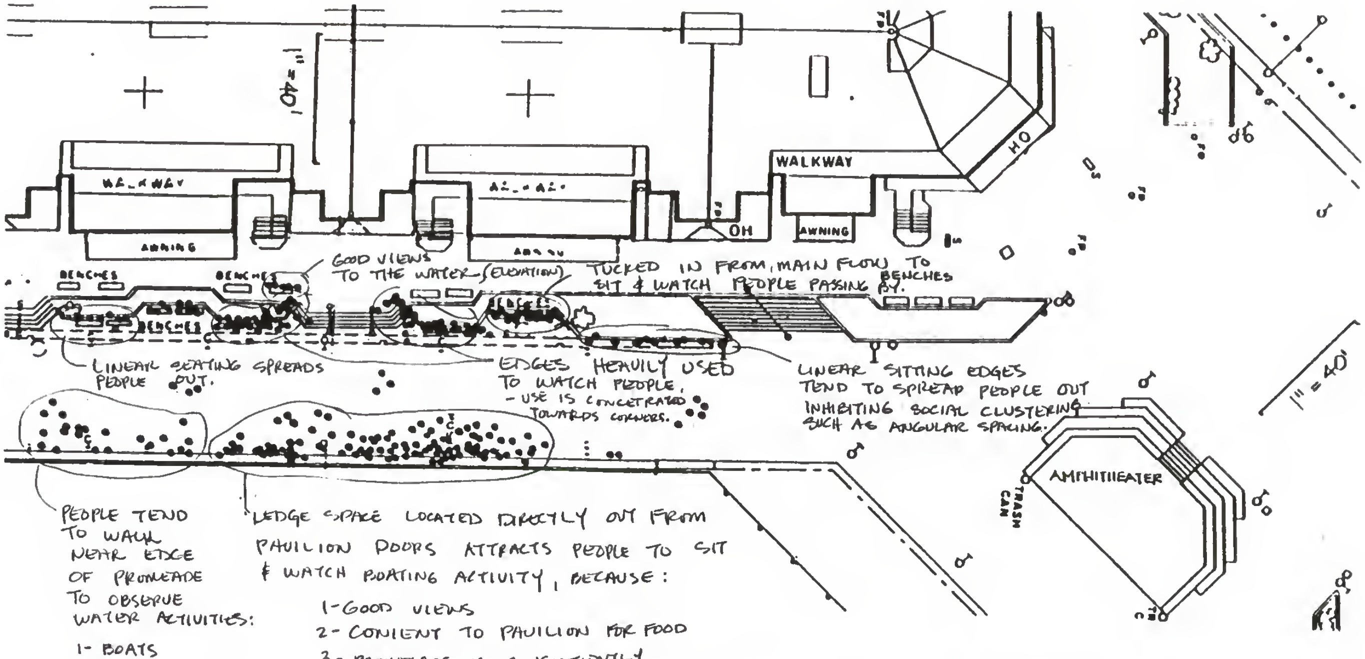
SITE —— Harborplace
STUDY AREA —— # ①
DAY (s) —— July 18, 1987
TIME —— 9:30 pm
KEY —— (o) WOMEN
(x) MEN
x o INDIVIDUALS
ⓧⓞ GROUPS

# BEHAVIOR MAP


WALKWAY
AWNING
OH
FP
BENCHES
1" = 40'
eating ice cream cones
trash can
life ring
strolling slowly while boat watching
People sitting to watch boats and relax in a space defined by a trash can and life ring
AMPHITHEATER
People are building waiting for another show.
TRASH CAN
Boats docking for the evening

# BEHAVIOR MAP

SITE —— Harborplace
STUDY AREA — # ①
DAY (S) —— July 18, 1987
TIME —— 4:00 pm
KEY —— (o) WOMEN
(x) MEN
x o INDIVIDUALS
(xo) GROUPS



GOOD VIEWS TO THE WATER (ELEVATION)

TUCKED IN FROM MAIN FLOW TO SIT & WATCH PEOPLE PASSING BY.

LINEAR SEATING SPREADS PEOPLE OUT.

EDGES HEAVILY USED TO WATCH PEOPLE, - USE IS CONCENTRATED TOWARDS CORNERS.

LINEAR SITTING EDGES TEND TO SPREAD PEOPLE OUT INHIBITING SOCIAL CLUSTERING SUCH AS ANGULAR SPACING.

PEOPLE TEND TO WALK NEAR EDGE OF PROMENADE TO OBSERVE WATER ACTIVITIES:

1- BOATS
2- DUCKS
3- CRABS
4- PADDLE BOATS
5- SEA GULLS ETC.

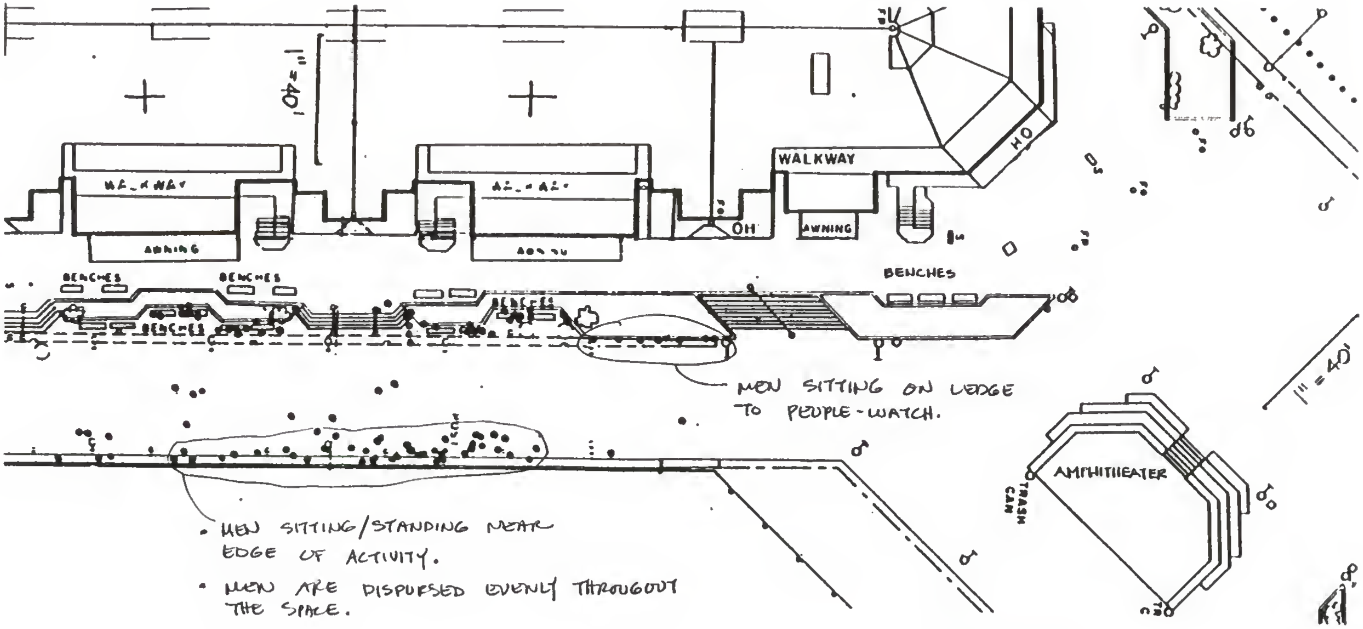
LEDGE SPACE LOCATED DIRECTLY OUT FROM PAVILION DOORS ATTRACTS PEOPLE TO SIT & WATCH BOATING ACTIVITY, BECAUSE:

1- GOOD VIEWS
2- CONIENT TO PAVILION FOR FOOD
3- PROMENADE IS CONSISTENTLY WIDE, THEREFORE ALLOWS PEOPLE TO SIT ON EDGE OF PEDESTRIAN CIRCULATION PATHS.

SITE —— Harborplace
STUDY AREA — Area # ①
DAY(S) —— July 26, 1987
TIME —— 2:00pm - 4:00pm
KEY —— (●●●) MEN & WOMEN (composite over time)

This study includes a composite of all men and women mapped during the (5) half-hour time periods from 2-4 pm.

USER CONCENTRATION MAP
ALL MEN & WOMEN
①



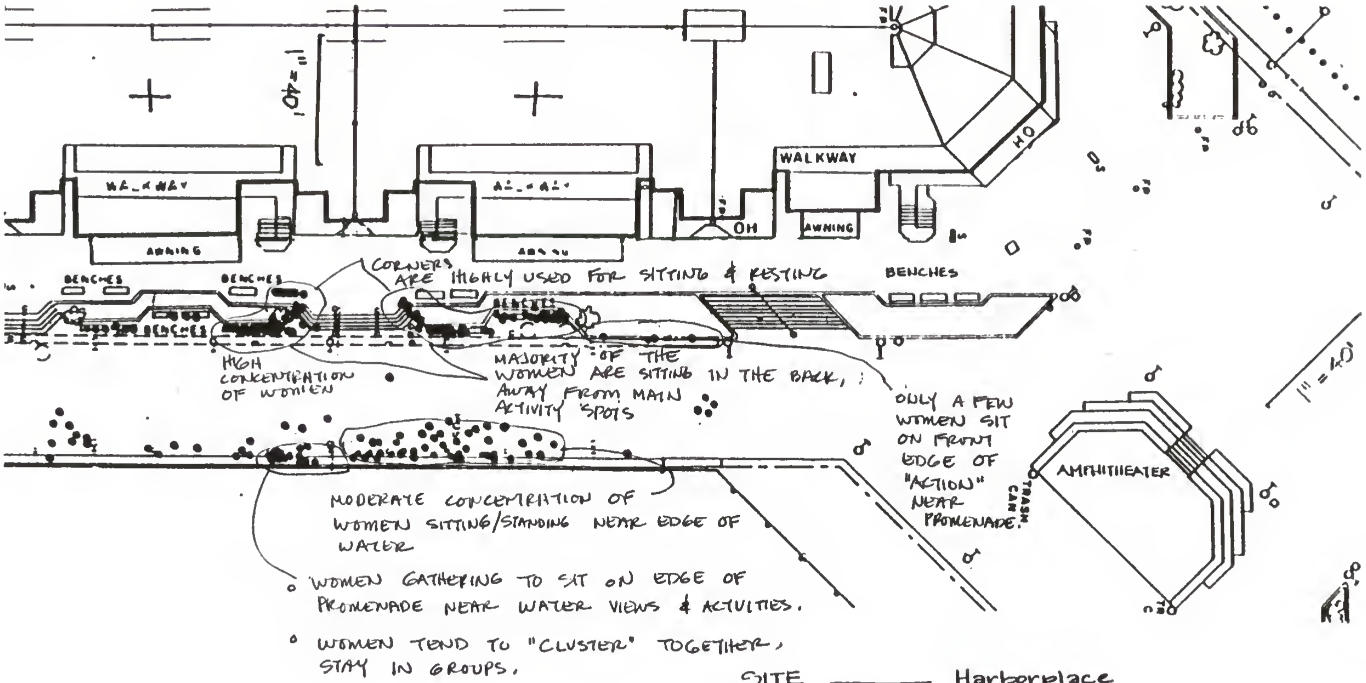
MEN SITTING ON LEDGE TO PEOPLE-WATCH.

- MEN SITTING/STANDING NEAR EDGE OF ACTIVITY.
- MEN ARE DISPURSED EVENLY THROUGOUT THE SPACE.

USER CONCENTRATION MAP

## ALL MEN

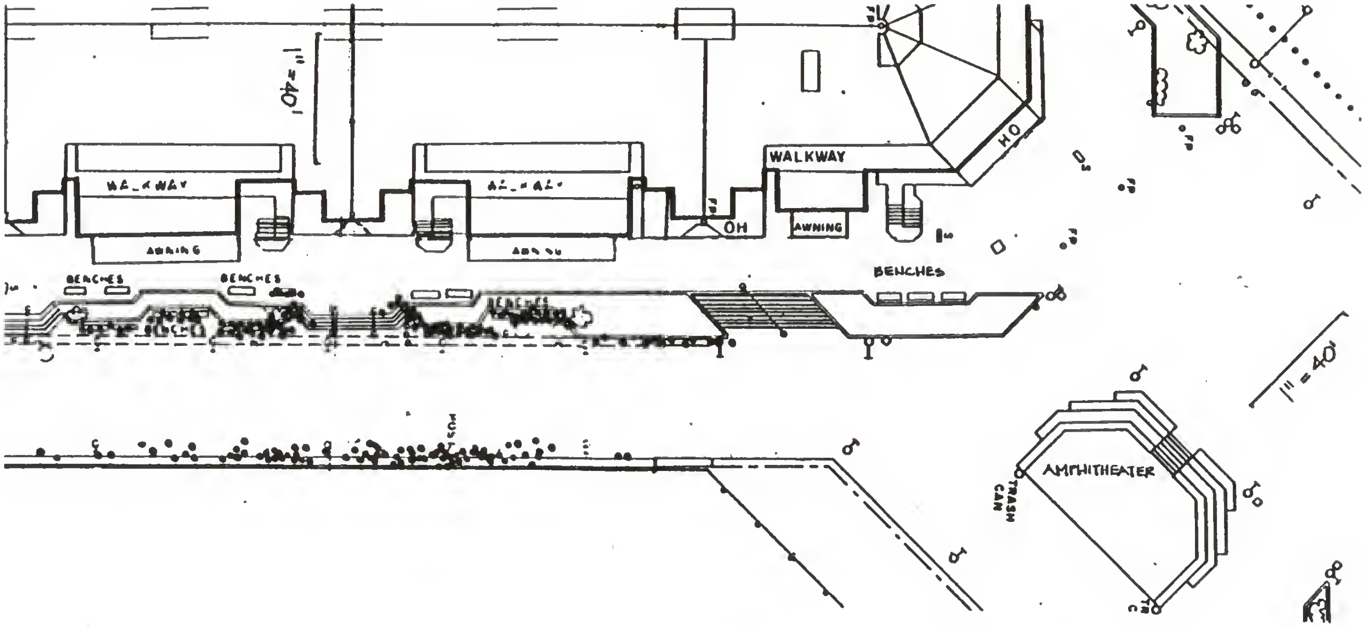
SITE —— Harborplace
STUDY AREA —— #①
DAY(S) —— July 26, 1987
TIME —— 2:00 - 4:00pm
KEY —— (•) MEN (composite over time)
This study includes all men mapped during the (5) half-hour time periods from 2-4 pm.


1" = 40'
WALKWAY
AWNING
WALKWAY
AWNING
OH
WALKWAY
AWNING
OH
BENCHES
BENCHES
BENCHES
BENCHES
BENCHES
AMPHITHEATER
TRASH CAN
FD
1" = 40'
CORNERS ARE HIGHLY USED FOR SITTING & RESTING
HIGH CONCENTRATION OF WOMEN
MAJORITY OF THE WOMEN ARE SITTING IN THE BACK, AWAY FROM MAIN ACTIVITY SPOTS
ONLY A FEW WOMEN SIT ON FRONT EDGE OF "ACTION" NEAR PROMENADE.
MODERATE CONCENTRATION OF WOMEN SITTING/STANDING NEAR EDGE OF WATER
◦ WOMEN GATHERING TO SIT ON EDGE OF PROMENADE NEAR WATER VIEWS & ACTIVITIES.
◦ WOMEN TEND TO "CLUSTER" TOGETHER, STAY IN GROUPS.

USER CONCENTRATION MAP

## ALL WOMEN

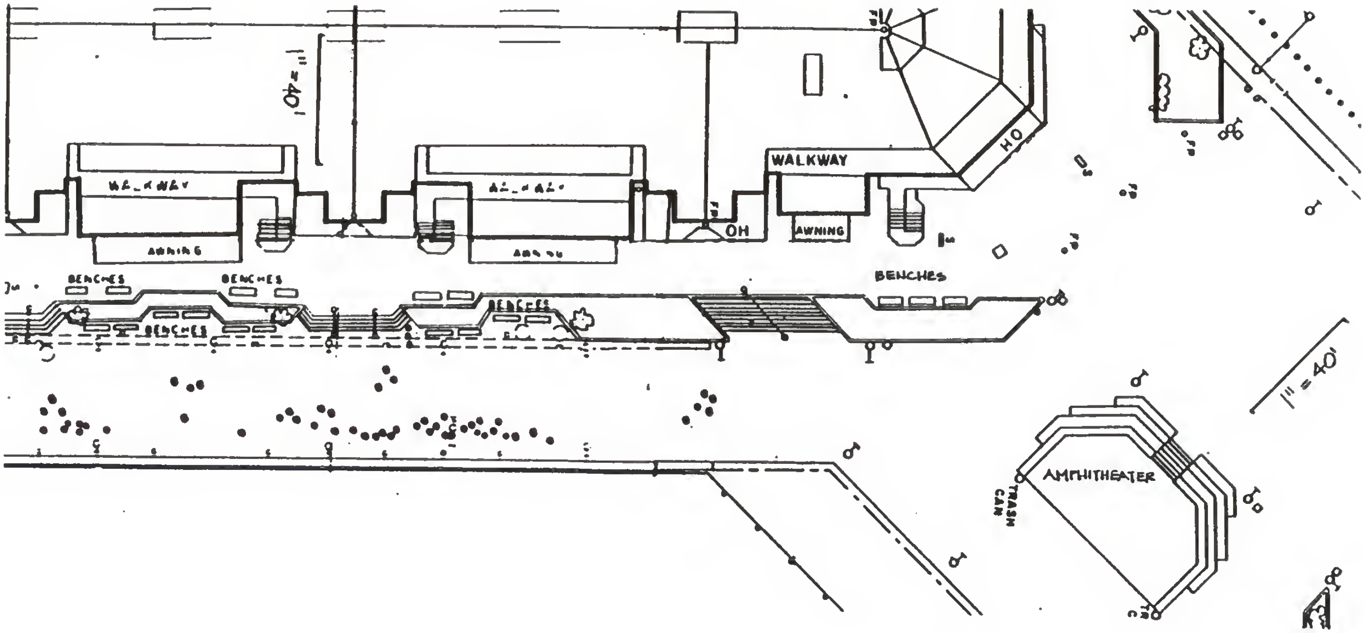
SITE ——— Harborplace
STUDY AREA — # ①
DAY (S) ——— July 26, 1987
TIME ——— 2:00 - 4:00 pm
KEY ——— (•) WOMEN (composite over time)
This study includes all women mapped during the (5) half-hour time periods from 2-4 pm.



# PEOPLE SITTING/ STANDING

SITE ——— Harborplace
STUDY AREA— Area #①
DAY (S) ——— July 26, 1987
TIME ——— 2:00pm - 4:00pm
KEY ——— (.·:·.) PEOPLE SITTING/STANDING

*This study is a composite of all people who are sitting/standing during all (5) unit time periods from 2-4 pm.

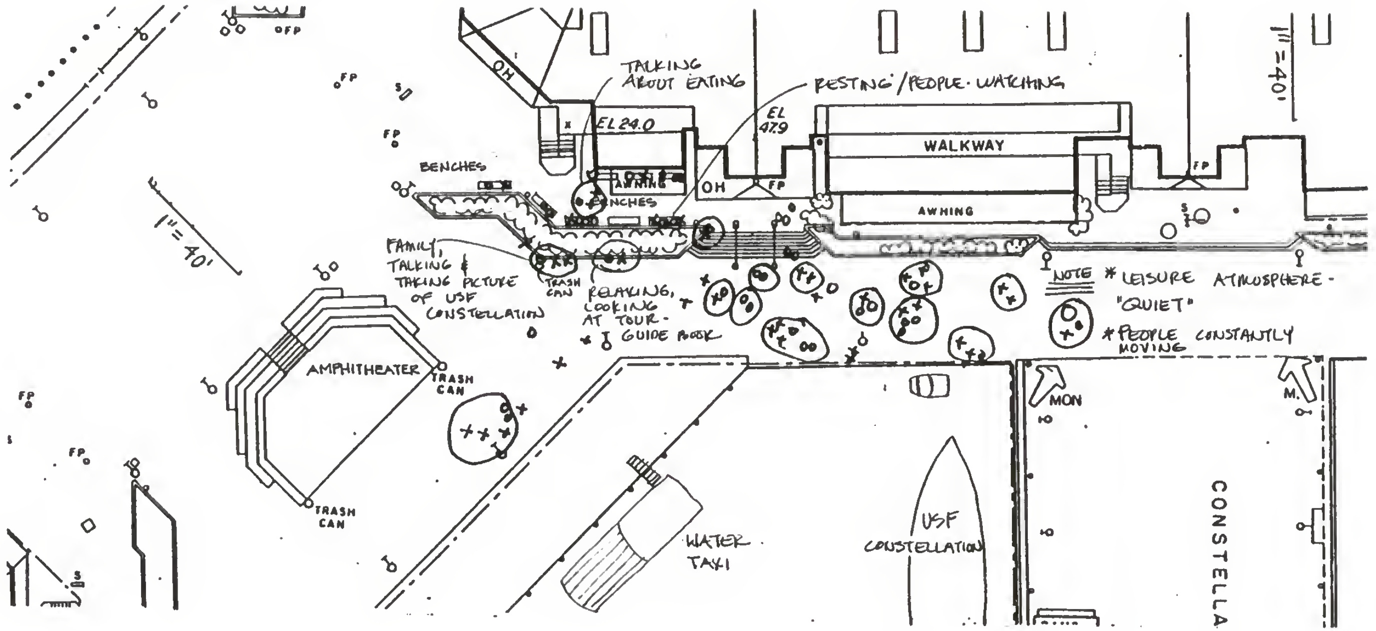


# PEOPLE MOVING

SITE ——— Harborplace
STUDY AREA — #①
DAY (s) ——— July 26, 1987
TIME ——— 2:00 – 4:00 pm
KEY ——— (•:••) PEOPLE MOVING

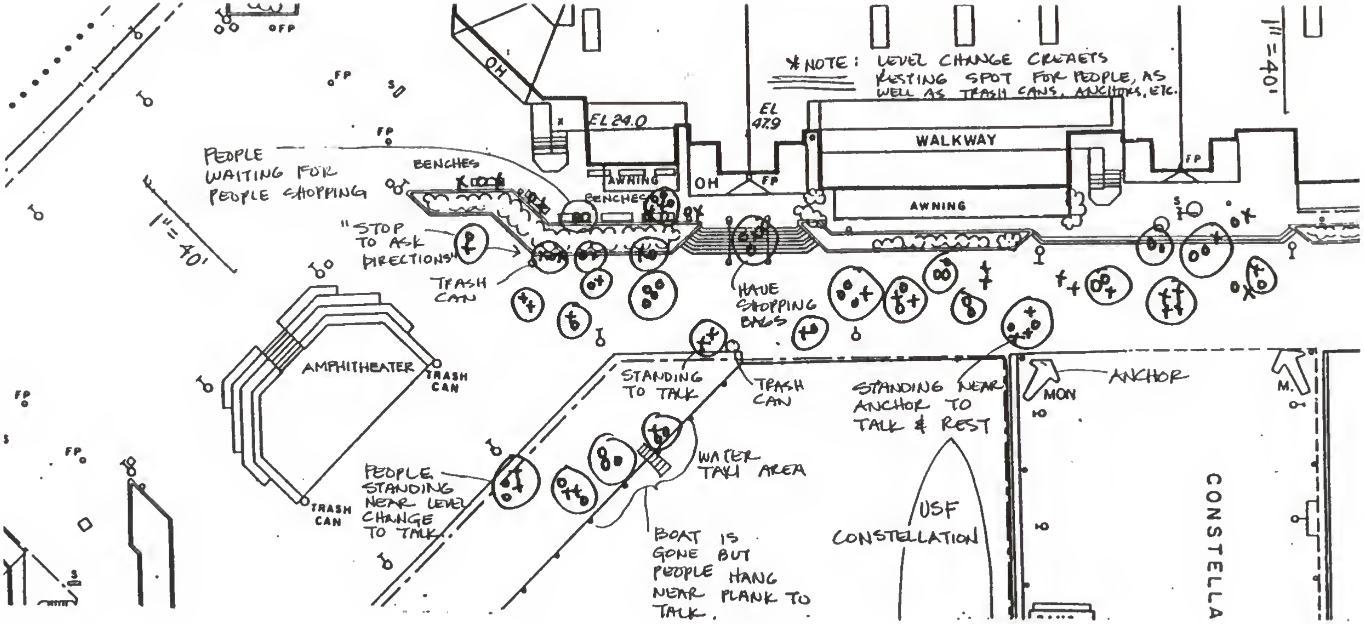
* This study is a composite of all people who were moving during the (5) unit time periods from 2-4 pm.

# Area 2 Behavior Maps



SITE ——— Harborplace
STUDY AREA — #②
DAY (S) ——— July 26, 1987
TIME ——— 2:00 pm
KEY ——— (o) WOMEN
(x) MEN
x o INDIVIDUALS
(xo) GROUPS

## BEHAVIOR MAP



*NOTE: LEVEL CHANGE CREATES RESTING SPOT FOR PEOPLE, AS WELL AS TRASH CANS, ANCHORS, ETC.

PEOPLE WAITING FOR PEOPLE SHOPPING

"STOP TO ASK DIRECTIONS"

TRASH CAN

HAVE SHOPPING BAGS

STANDING TO TALK

TRASH CAN

STANDING NEAR ANCHOR TO TALK & REST

ANCHOR

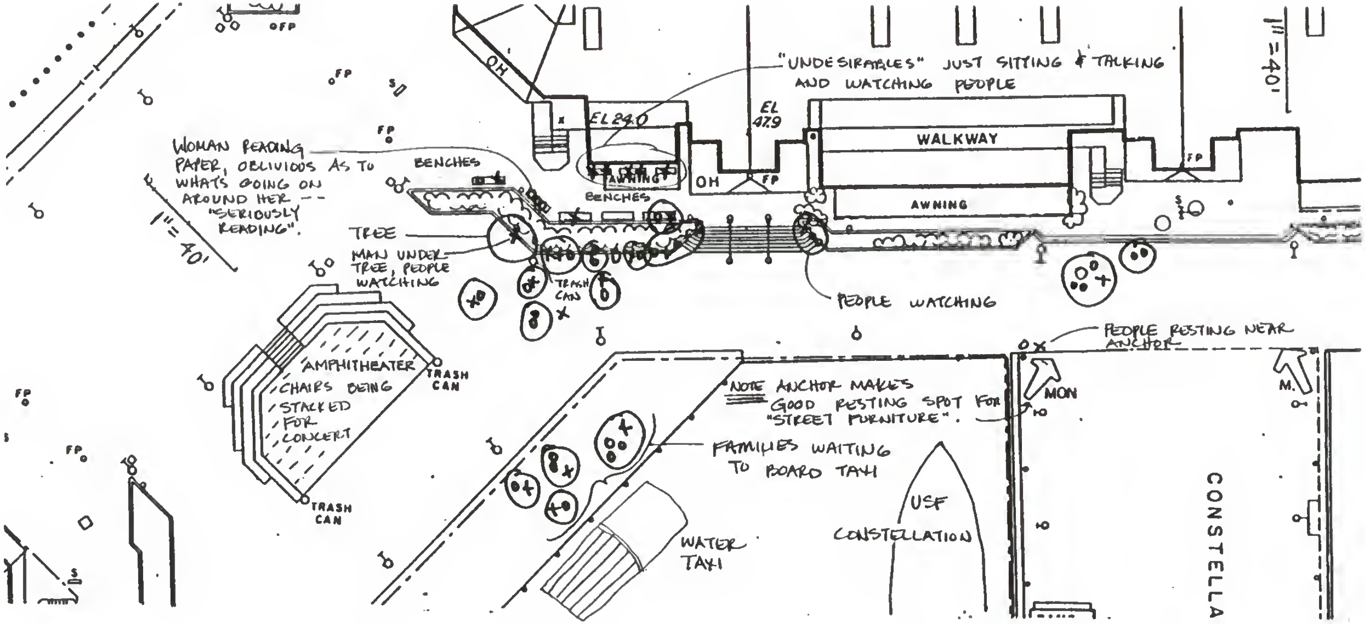
WATER TAXI AREA

BOAT IS GONE BUT PEOPLE HANG NEAR PLANK TO TALK.

PEOPLE STANDING NEAR LEVEL CHANGE TO TALK

# BEHAVIOR MAP

SITE ——— Harborplace
STUDY AREA— #2
DAY (s) ——— July 26, 1987
TIME ——— 2:30 pm
KEY ——— (o) WOMEN
(x) MEN
x o INDIVIDUALS
(x o) GROUPS


1" = 40'
"UNDESIRABLES" JUST SITTING & TALKING AND WATCHING PEOPLE
EL 24.0
EL 47.9
WALKWAY
AWNING
AWNING
OH
OH
FP
OFP
WOMAN READING PAPER, OBLIVIOUS AS TO WHATS GOING ON AROUND HER -- "SERIOUSLY READING".
BENCHES
BENCHES
TREE
MAN UNDER TREE, PEOPLE WATCHING
TRASH CAN
TRASH CAN
TRASH CAN
PEOPLE WATCHING
PEOPLE RESTING NEAR ANCHOR
AMPHITHEATER
CHAIRS BEING STACKED FOR CONCERT
NOTE ANCHOR MAKES GOOD RESTING SPOT FOR "STREET FURNITURE".
MON
M.
FAMILIES WAITING TO BOARD TAXI
USF CONSTELLATION
WATER TAXI
CONSTELLA
1" = 40'

SITE ——— Harborplace

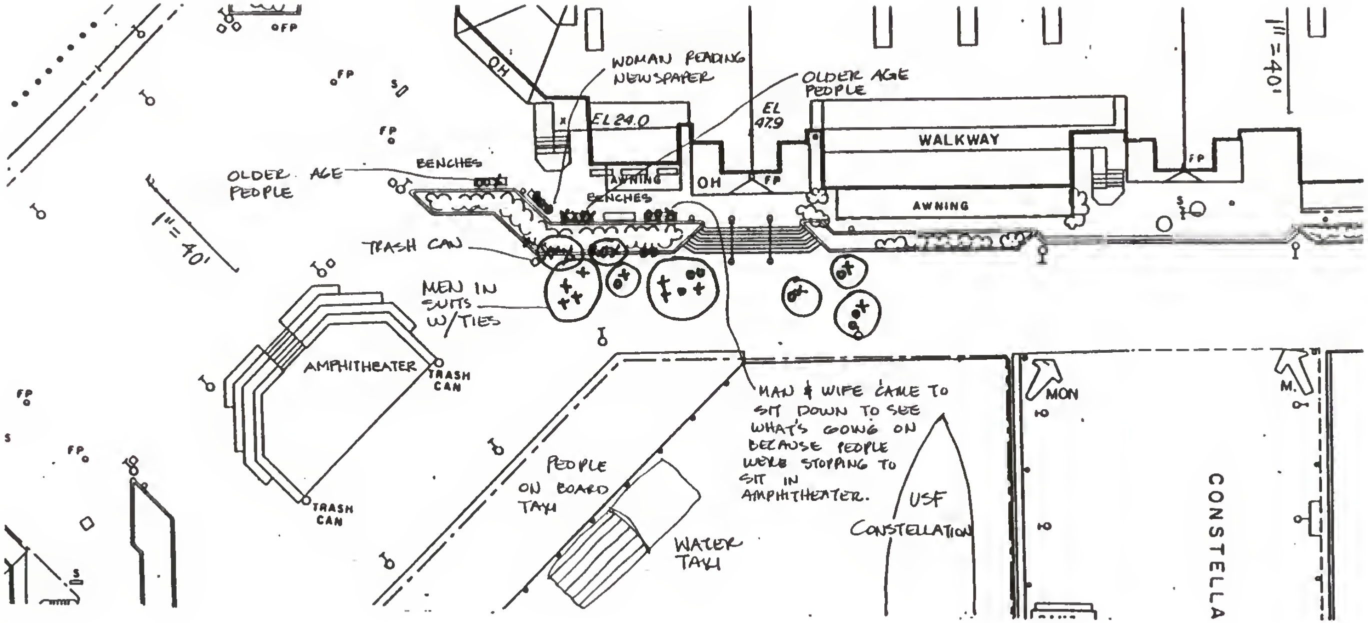
STUDY AREA ——— # ②

DAY (s) ——— July 26, 1987

TIME ——— 3:00 pm

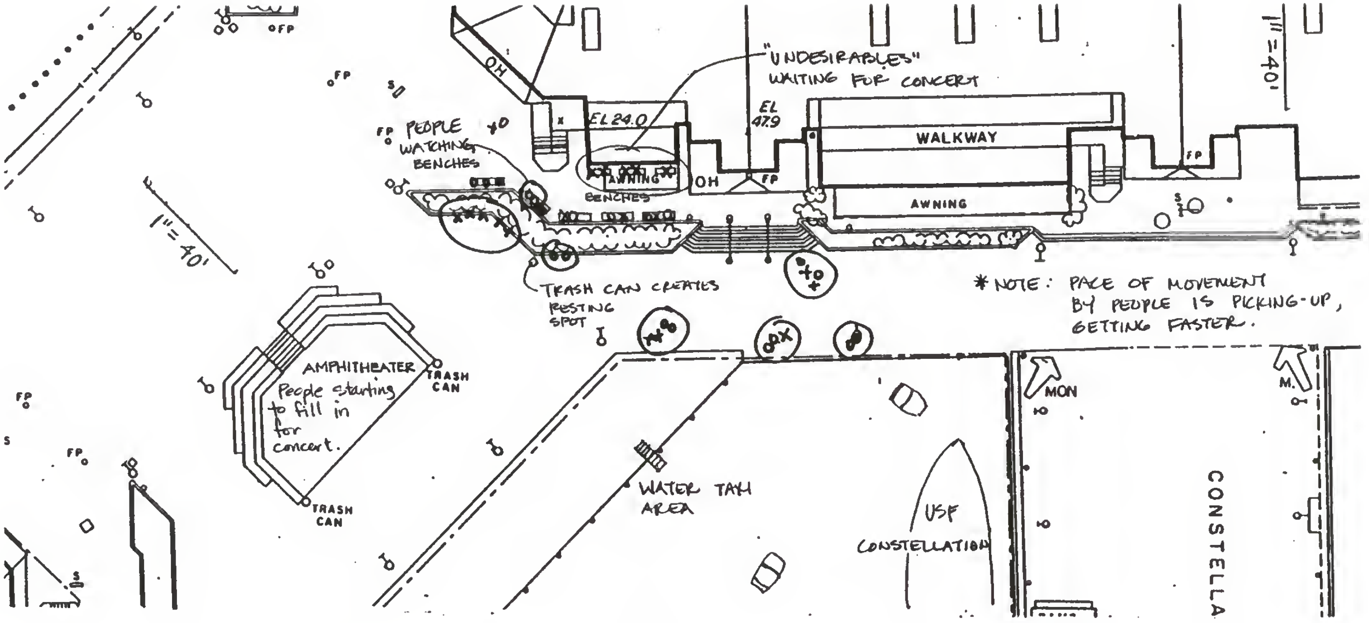
KEY ———
(o) WOMEN
(x) MEN
x o INDIVIDUALS
(x o) GROUPS

# BEHAVIOR MAP



SITE — Harborplace
STUDY AREA — # ②
DAY (S) — July 26, 1987
TIME — 3:30 pm
KEY — (o) WOMEN
(x) MEN
xo INDIVIDUALS
ⓧⓞ GROUPS

# BEHAVIOR MAP



* NOTE: PACE OF MOVEMENT BY PEOPLE IS PICKING-UP, GETTING FASTER.

SITE ——— Harborplace

STUDY AREA — * ②

DAY (S) ——— July 26, 1987

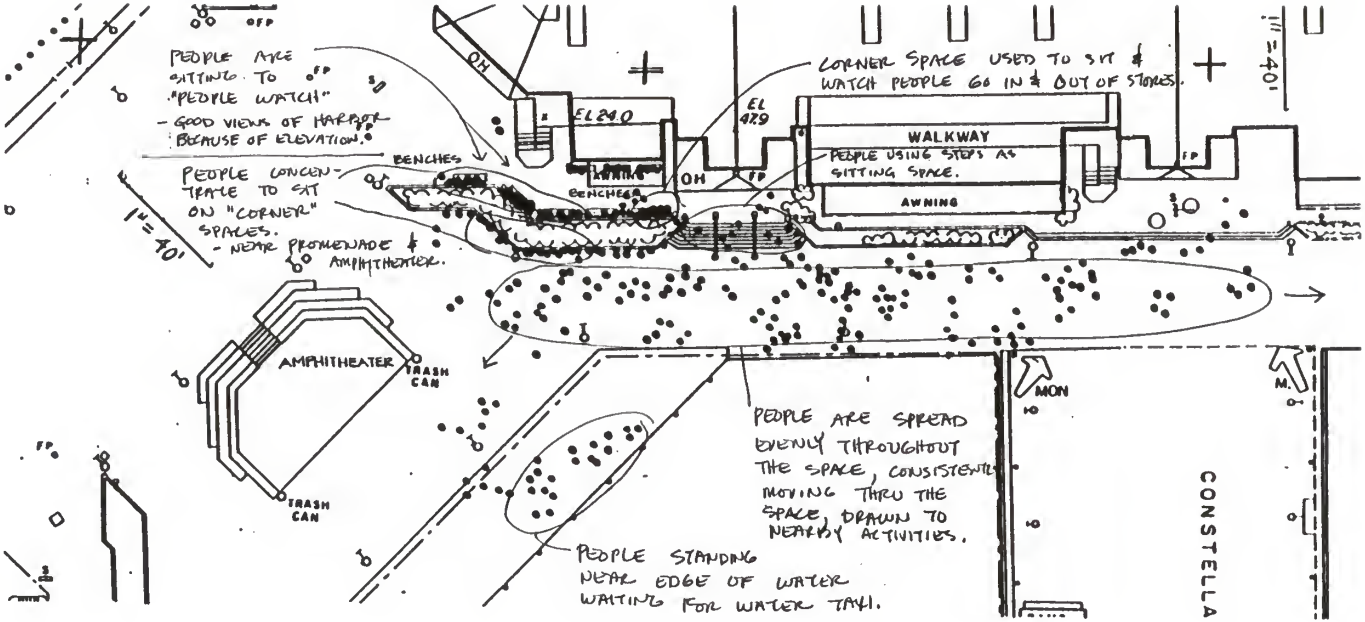
TIME ——— 4:00 pm

KEY ——— (o) WOMEN
(x) MEN

xo INDIVIDUALS

ⓧⓞ GROUPS

## BEHAVIOR MAP

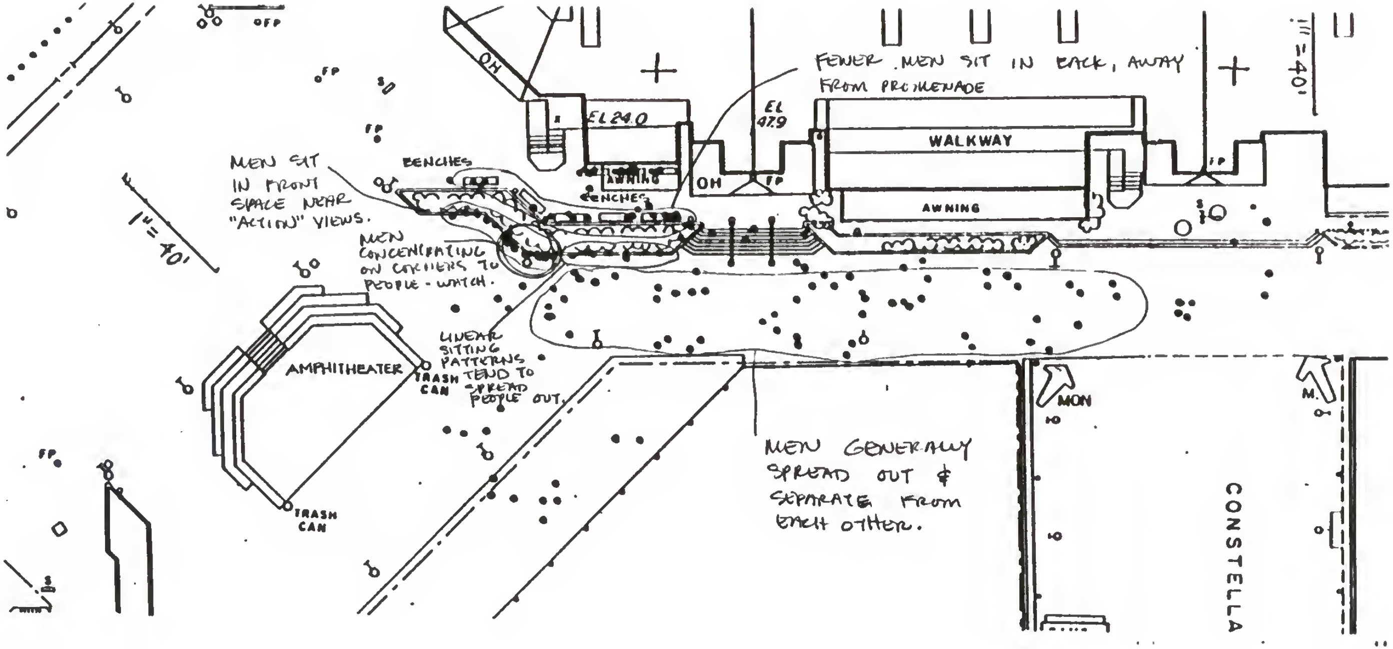

PEOPLE ARE SITTING TO "PEOPLE WATCH"
- GOOD VIEWS OF HARBOR BECAUSE OF ELEVATION.
PEOPLE CONCENTRATE TO SIT ON "CORNER" SPACES.
- NEAR PROMENADE & AMPHITHEATER.
1" = 40'
BENCHES
OH
EL 24.0
EL 47.9
BENCHES
AWNING
OH
FP
CORNER SPACE USED TO SIT & WATCH PEOPLE GO IN & OUT OF STORES.
WALKWAY
PEOPLE USING STEPS AS SITTING SPACE.
AWNING
1" = 40'
AMPHITHEATER
TRASH CAN
TRASH CAN
PEOPLE ARE SPREAD EVENLY THROUGHOUT THE SPACE, CONSISTENTLY MOVING THRU THE SPACE, DRAWN TO NEARBY ACTIVITIES.
PEOPLE STANDING NEAR EDGE OF WATER WAITING FOR WATER TAXI.
MON
M.
CONSTELLA

USER CONCENTRATION MAP

ALL MEN & WOMEN

②

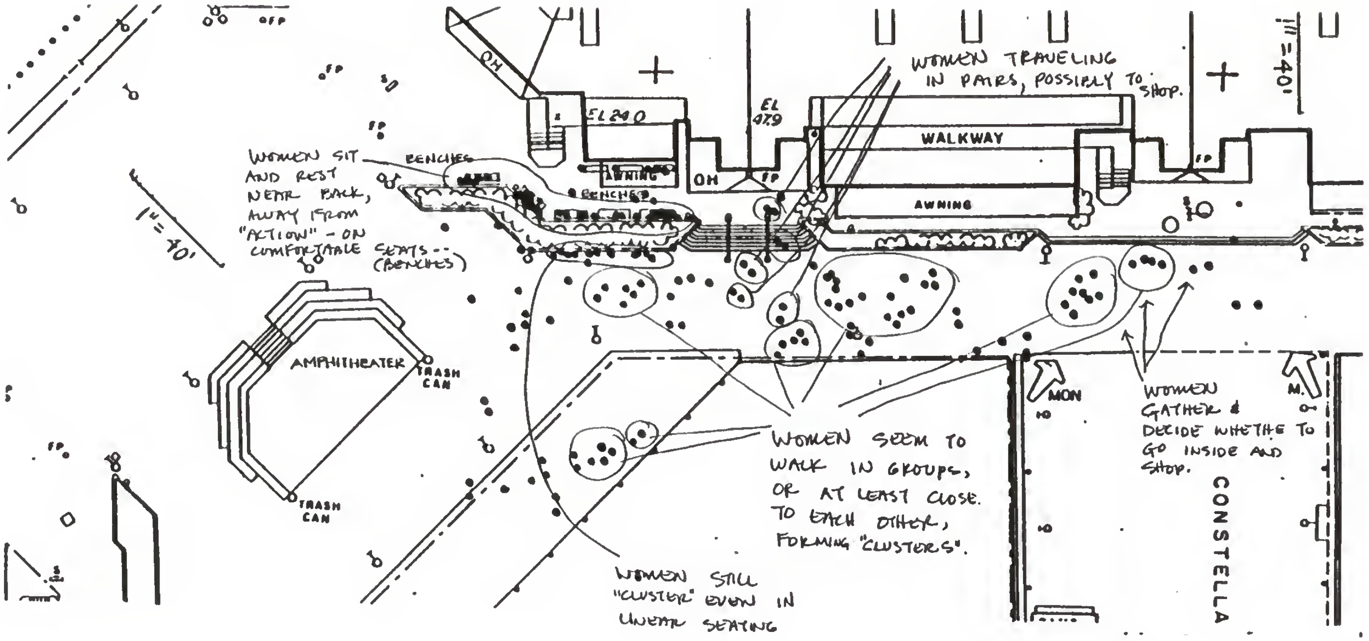
SITE —— Harborplace
STUDY AREA — # ②
DAY (S) —— July 18, 1987
TIME —— 2:00 pm - 4:00 pm
KEY —— (•:•:) MEN & WOMEN (composite)
This study includes all and women mapped from 2-4 pm during the (5) half-hour time periods.


1" = 40'
1" = 40'
FEWER MEN SIT IN BACK, AWAY FROM PROMENADE
WALKWAY
AWNING
EL 24.0
EL 47.9
OH
OH
FP
FP
OFF
AWNING
BENCHES
BENCHES
MEN SIT IN FRONT SPACE NEAR "ACTION" VIEWS.
MEN CONCENTRATING ON CORNERS TO PEOPLE - WATCH.
LINEAR SITTING PATTERNS TEND TO SPREAD PEOPLE OUT.
AMPHITHEATER
TRASH CAN
TRASH CAN
MEN GENERALLY SPREAD OUT & SEPARATE FROM EACH OTHER.
MON
M.
CONSTELLA

USER CONCENTRATION MAP

**ALL MEN**

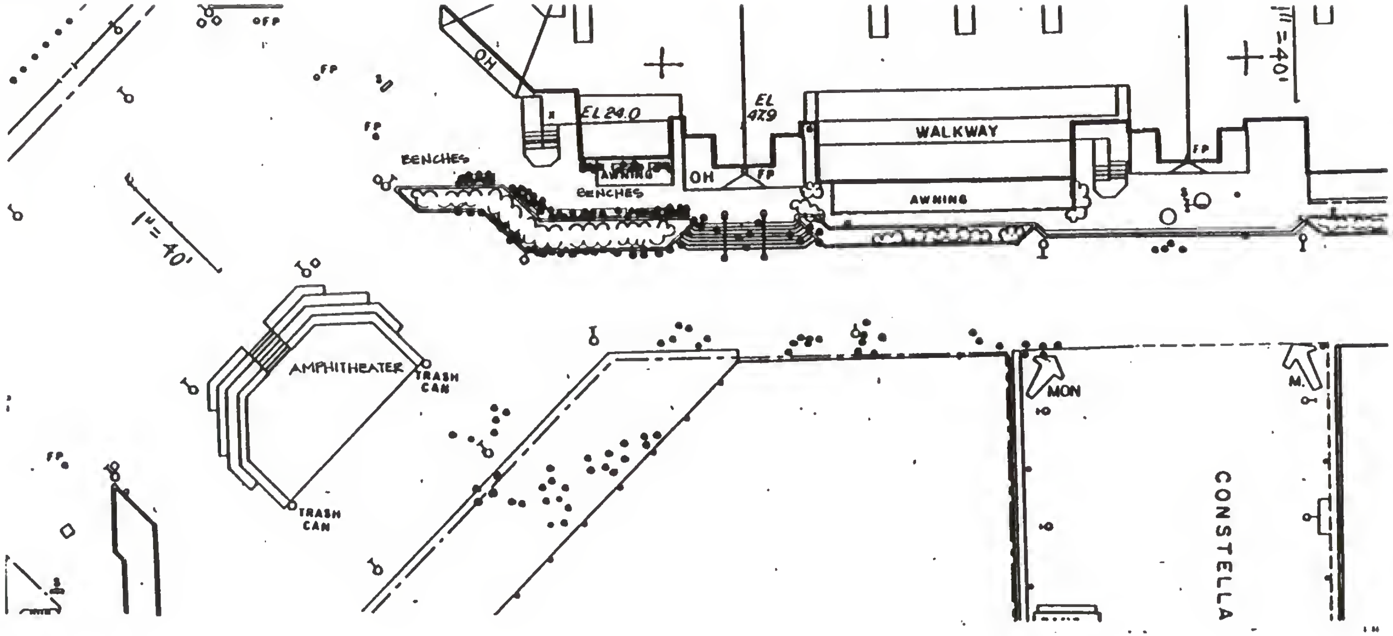
SITE —— Harborplace
STUDY AREA —— #②
DAY (S) —— July 18, 1987
TIME —— 2:00 - 4:00 pm
KEY —— (•) MEN (composite over time)
This study includes all men mapped during the (5) half-hour periods from 2-4 pm.


1" = 40'
WALKWAY
AWNING
EL 24.0
EL 47.9
OH
BENCHES
AMPHITHEATER
TRASH CAN
TRASH CAN
CONSTELLA
MON
M.
WOMEN TRAVELING IN PAIRS, POSSIBLY TO SHOP.
WOMEN SIT AND REST NEAR BACK, AWAY FROM "ACTION" - ON COMFORTABLE SEATS -- (BENCHES)
WOMEN SEEM TO WALK IN GROUPS, OR AT LEAST CLOSE TO EACH OTHER, FORMING "CLUSTERS".
WOMEN GATHER & DECIDE WHETHE TO GO INSIDE AND SHOP.
WOMEN STILL "CLUSTER" EVEN IN UNEAR SEATING

USER CONCENTRATION MAP

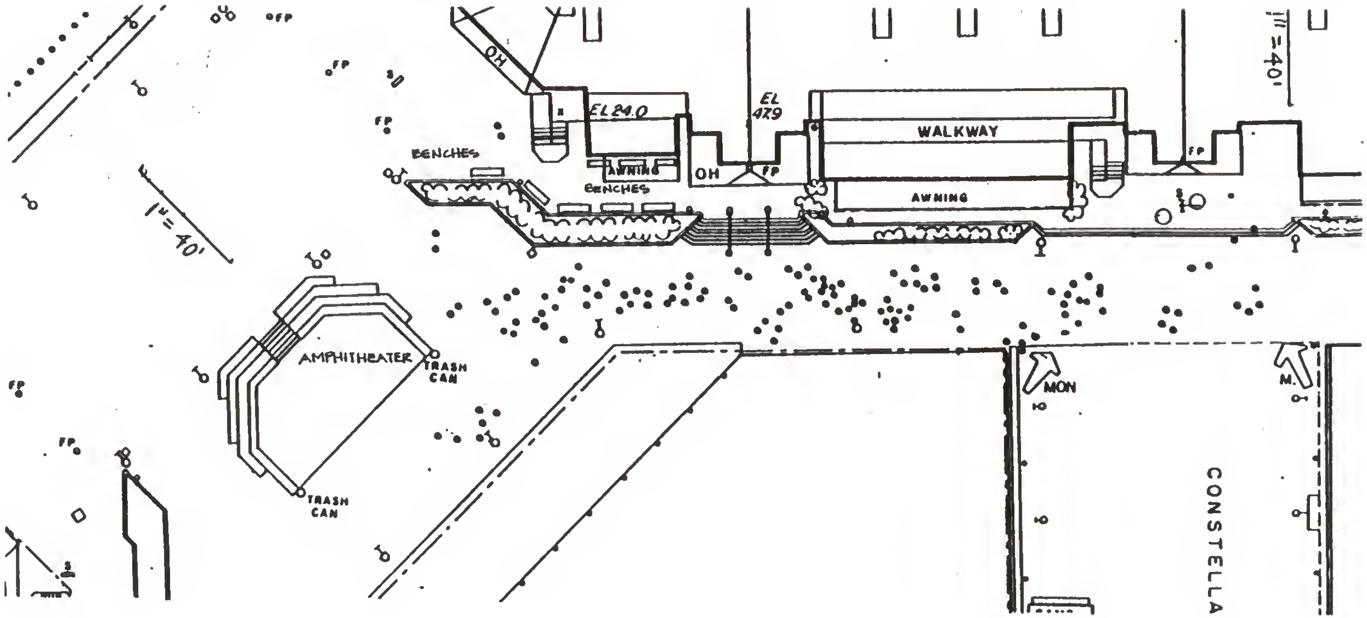
**ALL WOMEN**

SITE —— Harborplace
STUDY AREA — # ②
DAY (S) —— July 18, 1987
TIME —— 2:00pm - 4:00pm
KEY —— (•) WOMEN (composite over time)
This study includes all women mapped during the (5) half-hour time periods from 2-4 pm.



# PEOPLE SITTING / STANDING

SITE ——— Harborplace
STUDY AREA — # ②
DAY (s) ——— July 18, 1987
TIME ——— 2:00pm - 4:00pm
KEY ——— (•:•:•) PEOPLE SITTING/STANDING
This study is a composite of all people who were sitting & standing during the (5) unit time periods from 2-4 pm.



PEOPLE MOVING

SITE —— Harborplace
STUDY AREA — * ②
DAY (s) —— July 18, 1987
TIME —— 2:00pm - 4:00pm
KEY —— (∴·.) PEOPLE MOVING

* This study is a composite of all people who were moving during the (5) unit time periods from 2-4 pm.

# APPENDIX D

## Reflex Form and Data

Baltimore Inner Harbor
Light/Pratt Survey Form

STUDY AREA: Light SUBJECT NO.: 1 TIME: 2 DAY: 6

Q1 WHY CAME TO INNER HARBOR: 1
Q2 IS THIS FIRST TIME HERE: 2
Q3 HOW OFTEN COME TO HARBOR: 4
Q4 COME IF.NOT ON WATERFRONT: 3
Q5 SOCIAL ATMOSPHERE: 3
ACTIVITIES: 3
VIEW: 5
FOOD: 4
Q6 EAT HERE: 1
WHERE: 1
Q7 SIT AND. WATCH OTHERS: 1
Q8 COMFORTABLE SURROUNDINGS: 1
WHY: 1
Q9 CHAIRS OR. EDGE OF WATER: 1
Q10 SAFE WITHOUT HANDRAILS: 3
Q11 BEEN AT NIGHT: 2
Q12 WHAT ENJOY AT NIGHT: 0
Q13 ENJOY MOST: 1
Q14 ENJOY LEAST: 1
Q15 SUGGESTIONS: 1
OCCUPATION: 4
EDUCATION: 3
TOURIST RESIDENT WORKER: 2
AGE: 4
SEX: 2

## Baltimore Inner Harbor
## Light/Pratt Pavilion Survey Results

| STUDY AREA | DAY | TIME | SUBJECT | SEI | AGE | OCCU | EDUC | TOUR | Q1 | Q2 | Q3 | Q4 | Q5 | ACTIVITIES | VIEW | FOOD | Q6 | WHERE | Q7 | Q8 | WHY | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Light | 6 | 2 | 1 | 2 | 4 | 4 | 3 | 2 | 1 | 2 | 4 | 3 | 3 | 3 | 5 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 0 | 1 | 1 | 1 |
| Light | 6 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 3 | 2 | 3 | 3 | 3 | 4 | 4 | 4 | 1 | 2 | 1 | 1 | 3 | 1 | 1 | 1 | 2 | 1 | 1 | 3 |
| Light | 6 | 2 | 3 | 1 | 3 | 1 | 2 | 1 | 3 | 2 | 3 | 3 | 5 | 5 | 3 | 5 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 2 | 4 | 4 |
| Light | 6 | 2 | 4 | 1 | 3 | 1 | 2 | 1 | 1 | 2 | 4 | 3 | 4 | 3 | 5 | 5 | 1 | 3 | 1 | 1 | 1 | 2 | 1 | 1 | 3 | 2 | 5 | 5 |
| Light | 6 | 3 | 5 | 1 | 2 | 1 | 2 | 2 | 3 | 1 | 0 | 3 | 4 | 5 | 5 | 3 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 0 | 1 | 5 | 6 |
| Light | 6 | 3 | 6 | 1 | 4 | 1 | 2 | 2 | 3 | 2 | 4 | 3 | 3 | 3 | 5 | 4 | 1 | 3 | 1 | 1 | 3 | 4 | 1 | 2 | 0 | 1 | 1 | 2 |
| Light | 6 | 3 | 7 | 1 | 3 | 1 | 2 | 2 | 1 | 2 | 3 | 3 | 4 | 3 | 5 | 4 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 1 | 1 | 4 |
| Light | 6 | 3 | 8 | 1 | 3 | 1 | 1 | 1 | 4 | 1 | 0 | 3 | 3 | 3 | 2 | 5 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 8 |
| Light | 6 | 2 | 9 | 2 | 3 | 1 | 3 | 2 | 3 | 2 | 3 | 3 | 5 | 3 | 5 | 5 | 1 | 3 | 1 | 1 | 1 | 2 | 2 | 1 | 3 | 2 | 1 | 6 |
| Light | 7 | 4 | 10 | 1 | 2 | 1 | 2 | 1 | 4 | 1 | 0 | 3 | 4 | 5 | 4 | 4 | 1 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | 0 | 2 | 5 | 9 |
| Light | 6 | 2 | 11 | 1 | 3 | 1 | 2 | 2 | 4 | 2 | 3 | 4 | 4 | 3 | 5 | 5 | 1 | 2 | 1 | 1 | 1 | 4 | 1 | 1 | 2 | 1 | 5 | 2 |
| Light | 6 | 3 | 12 | 2 | 3 | 4 | 2 | 2 | 4 | 2 | 4 | 3 | 2 | 4 | 5 | 4 | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 0 | 1 | 5 | 11 |
| Light | 6 | 3 | 13 | 2 | 3 | 1 | 2 | 1 | 4 | 1 | 4 | 3 | 3 | 2 | 5 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 4 | 11 |
| Light | 6 | 3 | 14 | 2 | 4 | 1 | 2 | 1 | 4 | 1 | 4 | 3 | 3 | 2 | 5 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 4 | 11 |
| Light | 6 | 3 | 15 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 0 | 3 | 3 | 5 | 5 | 3 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 3 | 1 | 11 |
| Light | 6 | 3 | 16 | 2 | 2 | 1 | 1 | 1 | 4 | 2 | 4 | 3 | 3 | 5 | 4 | 3 | 1 | 3 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 3 | 1 | 10 |
| Light | 6 | 3 | 17 | 1 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 3 | 4 | 3 | 5 | 3 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 11 |
| Light | 6 | 3 | 18 | 2 | 2 | 3 | 1 | 2 | 3 | 2 | 4 | 3 | 5 | 5 | 4 | 5 | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | 11 |
| Light | 6 | 3 | 19 | 1 | 3 | 2 | 1 | 1 | 4 | 1 | 0 | 3 | 3 | 4 | 5 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 2 | 0 | 3 | 5 | 11 |
| Light | 6 | 3 | 20 | 2 | 3 | 1 | 2 | 1 | 1 | 1 | 0 | 3 | 4 | 5 | 5 | 5 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 4 | 2 | 1 |
| Light | 6 | 3 | 21 | 1 | 3 | 1 | 2 | 1 | 1 | 1 | 0 | 3 | 4 | 4 | 4 | 5 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 4 | 2 | 2 | 12 |
| Light | 6 | 4 | 22 | 1 | 3 | 1 | 2 | 2 | 4 | 2 | 4 | 3 | 5 | 4 | 4 | 5 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 2 | 0 | 1 | 5 | 9 |
| Light | 6 | 4 | 23 | 2 | 3 | 1 | 2 | 2 | 4 | 2 | 4 | 3 | 5 | 5 | 3 | 5 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 2 | 0 | 1 | 1 | 1 |
| Light | 6 | 3 | 24 | 1 | 3 | 1 | 3 | 1 | 4 | 1 | 0 | 3 | 3 | 3 | 4 | 5 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 2 | 5 | 1 |
| Light | 6 | 3 | 25 | 2 | 2 | 1 | 1 | 2 | 4 | 2 | 4 | 1 | 3 | 5 | 4 | 5 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 3 | 1 | 2 | 10 |
| Light | 6 | 3 | 26 | 2 | 1 | 3 | 1 | 2 | 2 | 2 | 4 | 3 | 3 | 5 | 4 | 3 | 1 | 3 | 1 | 2 | 1 | 2 | 1 | 2 | 0 | 1 | 1 | 11 |
| Light | 6 | 3 | 27 | 2 | 1 | 3 | 1 | 2 | 2 | 2 | 4 | 3 | 5 | 4 | 4 | 3 | 1 | 3 | 1 | 2 | 1 | 4 | 3 | 2 | 0 | 1 | 2 | 2 |
| Light | 6 | 3 | 28 | 1 | 3 | 1 | 2 | 2 | 3 | 2 | 3 | 1 | 4 | 3 | 4 | 3 | 1 | 2 | 1 | 1 | 1 | 4 | 1 | 1 | 3 | 1 | 3 | 3 |
| Light | 6 | 3 | 29 | 1 | 2 | 3 | 2 | 1 | 3 | 1 | 0 | 3 | 4 | 1 | 3 | 4 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 5 | 2 |
| Light | 6 | 3 | 30 | 1 | 2 | 3 | 2 | 1 | 3 | 2 | 4 | 1 | 4 | 3 | 3 | 5 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 5 | 3 |
| Light | 6 | 3 | 31 | 1 | 3 | 2 | 2 | 2 | 3 | 2 | 3 | 3 | 4 | 4 | 5 | 3 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 3 | 11 |
| Light | 6 | 3 | 32 | 2 | 2 | 1 | 3 | 2 | 4 | 2 | 2 | 3 | 5 | 5 | 4 | 5 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 2 | 1 | 1 |
| Light | 6 | 3 | 33 | 2 | 3 | 1 | 3 | 2 | 4 | 2 | 2 | 3 | 5 | 5 | 4 | 5 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 2 | 1 | 11 |
| Light | 6 | 3 | 34 | 2 | 3 | 1 | 3 | 1 | 4 | 1 | 0 | 3 | 3 | 4 | 5 | 5 | 2 | 0 | 3 | 1 | 3 | 4 | 1 | 2 | 0 | 2 | 1 | 7 |
| Light | 6 | 3 | 35 | 1 | 2 | 1 | 2 | 2 | 4 | 2 | 4 | 3 | 4 | 4 | 5 | 5 | 1 | 1 | 1 | 1 | 3 | 4 | 1 | 1 | 3 | 2 | 1 | 11 |
| Light | 6 | 3 | 36 | 1 | 1 | 3 | 1 | 1 | 3 | 2 | 4 | 3 | 3 | 3 | 5 | 5 | 1 | 2 | 2 | 1 | 2 | 4 | 2 | 1 | 3 | 1 | 1 | 13 |
| Light | 6 | 3 | 37 | 1 | 3 | 1 | 2 | 1 | 3 | 2 | 4 | 3 | 3 | 3 | 5 | 5 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 1 | 13 |
| Light | 6 | 4 | 38 | 2 | 2 | 1 | 2 | 2 | 4 | 2 | 3 | 3 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 1 | 4 | 1 | 1 | 3 |
| Light | 6 | 4 | 39 | 2 | 2 | 3 | 2 | 2 | 1 | 2 | 3 | 3 | 3 | 4 | 3 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 5 | 14 |
| Light | 6 | 4 | 40 | 1 | 2 | 3 | 2 | 2 | 1 | 2 | 3 | 1 | 3 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 11 |
| Light | 6 | 4 | 41 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 3 | 1 | 4 | 3 | 5 | 4 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 1 | 11 |
| Light | 6 | 4 | 42 | 1 | 3 | 2 | 1 | 2 | 1 | 2 | 3 | 1 | 3 | 3 | 5 | 4 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 1 | 11 |
| Light | 6 | 4 | 43 | 2 | 3 | 4 | 1 | 2 | 4 | 2 | 2 | 3 | 4 | 5 | 5 | 5 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 3 | 5 |
| Light | 6 | 4 | 44 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 0 | 1 | 5 | 3 | 5 | 5 | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 2 | 0 | 2 | 3 | 2 |
| Light | 6 | 4 | 45 | 1 | 2 | 1 | 1 | 2 | 4 | 2 | 3 | 1 | 5 | 1 | 4 | 5 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 5 | 11 |
| Light | 6 | 4 | 46 | 1 | 4 | 5 | 1 | 2 | 4 | 2 | 2 | 3 | 5 | 5 | 5 | 5 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | 5 | 11 |
| Light | 6 | 4 | 47 | 2 | 2 | 1 | 2 | 2 | 3 | 2 | 3 | 2 | 3 | 5 | 5 | 4 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 3 | 11 |
| Light | 6 | 4 | 48 | 2 | 2 | 1 | 2 | 2 | 3 | 2 | 3 | 2 | 3 | 5 | 5 | 5 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 1 | 3 | 11 |

| STUDY AREA | DAY | TIME | SUBJECT | SEX | AGE | OCCU | EDUC | TOUR | | Q1 | Q2 | Q3 | Q4 | Q5 | ACTIVITIES | VIEW | FOOD | Q6 | WHERE | Q7 | Q8 | WHY | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Light | 6 | 4 | 49 | 2 | 3 | 1 | 1 | 2 | | 3 | 2 | 4 | 3 | 4 | 4 | 5 | 5 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 3 | 11 |
| Light | 6 | 4 | 50 | 2 | 2 | 1 | 1 | 2 | | 3 | 2 | 4 | 3 | 4 | 5 | 4 | 5 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 1 | 1 | 6 |
| Light | 6 | 4 | 51 | 2 | 3 | 4 | 1 | 2 | | 1 | 2 | 1 | 3 | 5 | 5 | 5 | 5 | 1 | 3 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 5 | 11 |
| Light | 6 | 4 | 52 | 2 | 4 | 2 | 1 | 2 | | 1 | 2 | 2 | 3 | 5 | 5 | 5 | 5 | 1 | 3 | 1 | 1 | 2 | 1 | 2 | 1 | 3 | 2 | 5 | 4 |
| Light | 6 | 4 | 53 | 2 | 2 | 1 | 1 | 1 | | 4 | 2 | 4 | 3 | 3 | 4 | 5 | 5 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 4 | 2 | 1 | 11 |
| Light | 6 | 4 | 54 | 1 | 4 | 5 | 2 | 2 | | 3 | 2 | 4 | 3 | 5 | 4 | 5 | 4 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 3 | 1 | 5 | 5 |
| Light | 6 | 4 | 55 | 2 | 4 | 5 | 2 | 2 | | 4 | 2 | 4 | 3 | 5 | 4 | 5 | 4 | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 1 | 5 | 1 |
| Light | 6 | 4 | 56 | 1 | 2 | 1 | 2 | 2 | | 4 | 2 | 2 | 3 | 5 | 4 | 5 | 4 | 1 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 3 | 2 | 5 | 11 |
| Light | 6 | 4 | 57 | 2 | 2 | 1 | 1 | 1 | | 4 | 1 | 0 | 3 | 4 | 3 | 4 | 3 | 2 | 0 | 1 | 1 | 2 | 4 | 2 | 1 | 3 | 2 | 2 | 2 |
| Light | 6 | 4 | 58 | 2 | 2 | 1 | 2 | 2 | | 1 | 2 | 3 | 3 | 3 | 5 | 5 | 4 | 1 | 1 | 1 | 1 | 2 | 4 | 2 | 1 | 3 | 1 | 5 | 2 |
| Light | 6 | 4 | 59 | 1 | 3 | 1 | 1 | 2 | | 1 | 2 | 4 | 3 | 5 | 5 | 5 | 5 | 2 | 0 | 1 | 3 | 4 | 4 | 1 | 1 | 4 | 2 | 5 | 11 |
| Light | 6 | 4 | 60 | 1 | 3 | 1 | 2 | 2 | | 1 | 2 | 4 | 3 | 5 | 4 | 5 | 5 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | 3 | 2 | 2 | 10 |
| Light | 6 | 1 | 61 | 1 | 2 | 1 | 2 | 2 | | 3 | 2 | 4 | 3 | 4 | 2 | 4 | 5 | 1 | 2 | 1 | 2 | 1 | 4 | 1 | 1 | 3 | 2 | 5 | 1 |
| Light | 6 | 1 | 62 | 2 | 2 | 1 | 2 | 2 | | 4 | 1 | 0 | 3 | 5 | 4 | 3 | 4 | 1 | 1 | 1 | 1 | 4 | 2 | 1 | 2 | 0 | 2 | 5 | 1 |
| Light | 6 | 1 | 63 | 2 | 1 | 3 | 2 | 2 | | 3 | 2 | 4 | 3 | 4 | 4 | 4 | 4 | 1 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 3 | 1 | 5 | 11 |
| Light | 6 | 1 | 64 | 1 | 2 | 1 | 2 | 2 | | 3 | 2 | 4 | 1 | 4 | 4 | 4 | 4 | 1 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 3 | 1 | 2 | 2 |
| Light | 6 | 1 | 65 | 2 | 3 | 1 | 2 | 2 | | 3 | 2 | 3 | 3 | 4 | 4 | 5 | 4 | 1 | 3 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 1 | 3 | 5 |
| Light | 6 | 2 | 66 | 2 | 2 | 3 | 2 | 2 | | 3 | 2 | 4 | 3 | 3 | 3 | 4 | 4 | 1 | 3 | 1 | 2 | 1 | 4 | 1 | 1 | 3 | 2 | 1 | 2 |
| Light | 6 | 2 | 67 | 1 | 3 | 1 | 2 | 2 | | 2 | 1 | 4 | 3 | 4 | 4 | 4 | 4 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 3 | 3 | 2 |
| Light | 6 | 2 | 68 | 1 | 3 | 1 | 3 | 1 | | 4 | 2 | 4 | 3 | 5 | 4 | 4 | 5 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | 5 | 11 |
| Light | 6 | 2 | 69 | 1 | 2 | 1 | 2 | 2 | | 3 | 2 | 4 | 3 | 3 | 4 | 4 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 0 | 1 | 2 | 13 |
| Light | 6 | 2 | 70 | 1 | 3 | 2 | 2 | 2 | | 2 | 2 | 4 | 3 | 4 | 3 | 4 | 4 | 1 | 1 | 3 | 1 | 2 | 1 | 1 | 2 | 0 | 2 | 1 | 14 |
| Light | 6 | 3 | 71 | 1 | 2 | 1 | 2 | 1 | | 4 | 1 | 0 | 3 | 3 | 4 | 4 | 1 | 2 | 0 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 5 | 11 |
| Light | 6 | 4 | 72 | 2 | 2 | 1 | 2 | 2 | | 1 | 2 | 4 | 3 | 4 | 3 | 4 | 4 | 1 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | 0 | 1 | 1 | 14 |
| Light | 6 | 4 | 73 | 2 | 2 | 3 | 2 | 2 | | 1 | 2 | 4 | 3 | 5 | 5 | 5 | 5 | 1 | 2 | 1 | 1 | 4 | 2 | 1 | 1 | 3 | 2 | 5 | 11 |
| Light | 6 | 4 | 74 | 1 | 2 | 1 | 2 | 1 | | 4 | 1 | 0 | 2 | 3 | 4 | 4 | 3 | 1 | 2 | 1 | 1 | 4 | 2 | 1 | 2 | 0 | 2 | 5 | 11 |
| Light | 6 | 4 | 75 | 2 | 2 | 1 | 2 | 1 | | 2 | 1 | 0 | 3 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 3 | 5 | 5 | 11 |
| Light | 6 | 4 | 76 | 1 | 1 | 3 | 1 | 1 | | 2 | 1 | 0 | 4 | 3 | 5 | 4 | 4 | 1 | 1 | 1 | 1 | 2 | 3 | 1 | 1 | 1 | 1 | 1 | 14 |
| Light | 5 | 1 | 77 | 2 | 2 | 1 | 1 | 3 | | 4 | 3 | 2 | 2 | 5 | 5 | 5 | 4 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 5 | 11 |
| Light | 5 | 1 | 78 | 2 | 2 | 1 | 1 | 3 | | 1 | 2 | 1 | 3 | 4 | 3 | 5 | 5 | 1 | 2 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 3 | 11 |
| Light | 5 | 2 | 79 | 2 | 3 | 1 | 2 | 3 | | 4 | 2 | 2 | 4 | 3 | 4 | 5 | 4 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 2 | 4 | 2 | 1 | 13 |
| Light | 5 | 2 | 80 | 2 | 3 | 1 | 2 | 3 | | 4 | 2 | 1 | 1 | 5 | 4 | 3 | 5 | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 1 | 1 | 2 | 2 | 13 |
| Light | 5 | 2 | 81 | 2 | 3 | 1 | 2 | 3 | | 4 | 2 | 2 | 3 | 5 | 5 | 5 | 3 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 2 | 1 |
| Light | 5 | 2 | 82 | 2 | 2 | 1 | 2 | 3 | | 3 | 2 | 2 | 3 | 5 | 4 | 5 | 3 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 5 | 11 |
| Light | 5 | 2 | 83 | 1 | 2 | 1 | 2 | 3 | | 4 | 2 | 1 | 3 | 4 | 3 | 5 | 5 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | 1 | 11 |
| Light | 5 | 2 | 84 | 1 | 3 | 1 | 3 | 3 | | 4 | 2 | 2 | 3 | 5 | 4 | 5 | 3 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 2 | 5 | 11 |
| Light | 5 | 2 | 85 | 1 | 3 | 1 | 2 | 3 | | 1 | 2 | 1 | 3 | 5 | 5 | 5 | 5 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 1 | 11 |
| Light | 5 | 2 | 86 | 1 | 2 | 1 | 2 | 3 | | 4 | 2 | 3 | 3 | 5 | 4 | 5 | 4 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 1 | 2 | 1 | 5 | 11 |
| Light | 5 | 2 | 87 | 1 | 2 | 1 | 2 | 3 | | 4 | 2 | 3 | 3 | 5 | 4 | 5 | 3 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 5 | 11 |
| Light | 5 | 2 | 88 | 1 | 3 | 1 | 2 | 3 | | 3 | 1 | 0 | 2 | 4 | 4 | 5 | 5 | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 2 | 0 | 1 | 5 | 11 |
| Light | 5 | 2 | 89 | 1 | 3 | 1 | 2 | 3 | | 1 | 2 | 2 | 3 | 5 | 4 | 5 | 5 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 4 | 2 | 1 | 11 |
| Light | 5 | 2 | 90 | 1 | 2 | 1 | 2 | 3 | | 4 | 2 | 1 | 3 | 5 | 3 | 4 | 5 | 1 | 2 | 1 | 1 | 1 | 4 | 1 | 1 | 3 | 2 | 5 | 11 |
| Light | 5 | 2 | 91 | 1 | 3 | 1 | 2 | 2 | | 1 | 2 | 2 | 3 | 4 | 4 | 5 | 5 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 1 | 2 | 5 | 11 |
| Light | 5 | 2 | 92 | 1 | 3 | 1 | 3 | 2 | | 1 | 2 | 3 | 3 | 5 | 5 | 4 | 5 | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 5 | 11 |
| Light | 5 | 2 | 93 | 1 | 2 | 1 | 2 | 2 | | 3 | 2 | 2 | 3 | 5 | 5 | 5 | 5 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 2 | 0 | 1 | 1 | 11 |
| Light | 5 | 2 | 94 | 1 | 3 | 1 | 2 | 2 | | 1 | 2 | 2 | 3 | 5 | 5 | 5 | 5 | 2 | 0 | 1 | 1 | 2 | 4 | 1 | 2 | 0 | 1 | 5 | 11 |
| Light | 5 | 2 | 95 | 2 | 2 | 1 | 2 | 1 | | 1 | 1 | 0 | 4 | 5 | 5 | 4 | 5 | 1 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | 0 | 1 | 5 | 11 |
| Light | 5 | 2 | 96 | 2 | 3 | 1 | 2 | 1 | | 1 | 1 | 0 | 4 | 5 | 5 | 4 | 5 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 2 | 0 | 2 | 5 | 11 |
| Light | 5 | 2 | 97 | 2 | 3 | 1 | 2 | 2 | | 1 | 1 | 0 | 4 | 5 | 4 | 3 | 5 | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 2 | 0 | 2 | 5 | 11 |
| Light | 5 | 2 | 98 | 2 | 3 | 1 | 2 | 2 | | 1 | 2 | 1 | 3 | 5 | 4 | 5 | 4 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 2 | 0 | 1 | 1 | 11 |
| Light | 5 | 2 | 99 | 2 | 3 | 1 | 2 | 1 | | 1 | 1 | 0 | 3 | 5 | 4 | 4 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 2 | 1 |
| Light | 5 | 2 | 100 | 2 | 2 | 1 | 2 | 2 | | 1 | 2 | 1 | 3 | 5 | 4 | 5 | 4 | 1 | 3 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | 2 | 5 | 11 |

| STUDY AREA | DAY | TIME | SUBJECT | SEX | AGE | OCCU | EDUC | TOUR | Q1 | Q2 | Q3 | Q4 | Q5 | ACTIVITIES | VIEW | FOOD | Q6 | WHERE | Q7 | Q8 | WHY | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pratt | 6 | 3 | 101 | 2 | 3 | 1 | 1 | 1 | 3 | 2 | 4 | 2 | 4 | 5 | 5 | 5 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 5 | 11 |
| Pratt | 6 | 3 | 102 | 2 | 3 | 1 | 2 | 1 | 3 | 2 | 4 | 2 | 4 | 5 | 5 | 5 | 1 | 3 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 2 | 11 |
| Pratt | 7 | 3 | 103 | 2 | 2 | 1 | 2 | 1 | 3 | 1 | 0 | 2 | 5 | 5 | 3 | 5 | 1 | 3 | 1 | 1 | 2 | 2 | 1 | 2 | 0 | 1 | 1 | 2 |
| Pratt | 7 | 3 | 104 | 2 | 3 | 1 | 1 | 2 | 3 | 2 | 2 | 3 | 5 | 5 | 5 | 5 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 1 | 11 |
| Pratt | 7 | 3 | 105 | 2 | 3 | 1 | 2 | 1 | 3 | 2 | 4 | 3 | 5 | 4 | 5 | 5 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | 5 | 11 |
| Pratt | 7 | 3 | 106 | 2 | 2 | 1 | 2 | 1 | 4 | 1 | 0 | 2 | 5 | 4 | 3 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 4 | 1 | 3 | 1 | 5 | 1 |
| Pratt | 7 | 3 | 107 | 2 | 3 | 1 | 1 | 2 | 4 | 2 | 2 | 3 | 4 | 4 | 4 | 3 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 5 | 6 |
| Pratt | 7 | 3 | 108 | 1 | 2 | 1 | 2 | 1 | 4 | 2 | 4 | 3 | 4 | 4 | 5 | 5 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | 5 | 11 |
| Pratt | 7 | 3 | 109 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 4 | 3 | 4 | 4 | 3 | 5 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 5 | 3 |
| Pratt | 7 | 3 | 110 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 2 | 4 | 4 | 5 | 5 | 1 | 1 | 1 | 1 | 4 | 2 | 1 | 1 | 3 | 2 | 2 | 2 |
| Pratt | 7 | 3 | 111 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 4 | 3 | 4 | 5 | 4 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 2 | 11 |
| Pratt | 7 | 3 | 112 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 0 | 1 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 0 | 2 | 5 | 1 |
| Pratt | 7 | 3 | 113 | 1 | 4 | 2 | 1 | 2 | 3 | 2 | 2 | 3 | 5 | 5 | 5 | 5 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 3 | 1 | 5 | 11 |
| Pratt | 7 | 3 | 114 | 1 | 2 | 3 | 2 | 2 | 4 | 2 | 4 | 3 | 3 | 3 | 4 | 5 | 1 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 4 | 2 | 1 | 11 |
| Pratt | 7 | 3 | 115 | 2 | 2 | 1 | 2 | 1 | 4 | 1 | 0 | 3 | 5 | 4 | 5 | 5 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 1 |
| Pratt | 7 | 3 | 116 | 2 | 3 | 1 | 2 | 1 | 4 | 2 | 4 | 3 | 5 | 5 | 5 | 5 | 1 | 1 | 2 | 1 | 4 | 1 | 1 | 2 | 0 | 2 | 5 | 11 |
| Pratt | 7 | 3 | 117 | 1 | 3 | 2 | 1 | 2 | 3 | 2 | 2 | 3 | 4 | 5 | 5 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 1 | 11 |
| Pratt | 7 | 3 | 118 | 1 | 4 | 1 | 2 | 2 | 4 | 2 | 2 | 2 | 5 | 5 | 4 | 5 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 5 | 11 |
| Pratt | 7 | 3 | 119 | 2 | 3 | 1 | 2 | 2 | 3 | 2 | 3 | 3 | 5 | 4 | 4 | 4 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 5 | 3 |
| Pratt | 7 | 3 | 120 | 2 | 2 | 3 | 2 | 2 | 1 | 1 | 0 | 1 | 3 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 5 | 11 |
| Pratt | 7 | 4 | 121 | 1 | 2 | 3 | 2 | 1 | 2 | 2 | 4 | 3 | 3 | 4 | 5 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | 5 | 11 |
| Pratt | 7 | 4 | 122 | 2 | 2 | 3 | 2 | 1 | 2 | 1 | 0 | 3 | 4 | 4 | 5 | 4 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 2 | 1 | 11 |
| Pratt | 7 | 4 | 123 | 2 | 3 | 5 | 2 | 1 | 2 | 2 | 4 | 3 | 3 | 0 | 5 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 0 | 2 | 4 | 2 |
| Pratt | 7 | 4 | 124 | 1 | 4 | 5 | 1 | 2 | 4 | 2 | 1 | 3 | 5 | 5 | 5 | 5 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 3 | 1 | 5 | 6 |
| Pratt | 7 | 4 | 125 | 2 | 2 | 1 | 2 | 2 | 4 | 2 | 3 | 3 | 4 | 3 | 5 | 5 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 1 | 6 |
| Pratt | 7 | 4 | 126 | 1 | 2 | 1 | 2 | 2 | 4 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 1 | 3 | 1 | 1 | 1 | 4 | 1 | 1 | 4 | 2 | 1 | 6 |
| Pratt | 7 | 4 | 127 | 2 | 3 | 1 | 1 | 1 | 4 | 2 | 4 | 3 | 5 | 5 | 5 | 5 | 1 | 3 | 1 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 5 | 11 |
| Pratt | 7 | 4 | 128 | 1 | 3 | 1 | 3 | 1 | 4 | 2 | 4 | 3 | 3 | 2 | 3 | 3 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 2 | 5 | 11 |
| Pratt | 7 | 4 | 129 | 2 | 3 | 5 | 1 | 2 | 4 | 2 | 4 | 3 | 5 | 4 | 5 | 5 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 0 | 1 | 5 | 11 |
| Pratt | 7 | 4 | 130 | 1 | 3 | 1 | 2 | 2 | 4 | 2 | 4 | 3 | 5 | 3 | 5 | 4 | 1 | 3 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 2 | 5 | 11 |
| Pratt | 7 | 4 | 131 | 2 | 3 | 3 | 2 | 2 | 4 | 2 | 4 | 3 | 5 | 3 | 5 | 5 | 1 | 3 | 1 | 1 | 2 | 4 | 2 | 1 | 2 | 1 | 5 | 3 |
| Pratt | 7 | 4 | 132 | 2 | 3 | 1 | 2 | 2 | 4 | 2 | 3 | 3 | 4 | 5 | 5 | 5 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | 5 | 3 |
| Pratt | 6 | 2 | 133 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 0 | 4 | 4 | 4 | 4 | 4 | 1 | 2 | 3 | 1 | 4 | 2 | 1 | 2 | 0 | 2 | 1 | 11 |
| Pratt | 6 | 3 | 134 | 1 | 3 | 1 | 3 | 2 | 4 | 2 | 4 | 1 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 2 | 0 | 1 | 2 | 11 |
| Pratt | 6 | 3 | 135 | 1 | 4 | 5 | 3 | 1 | 2 | 2 | 4 | 3 | 5 | 4 | 5 | 5 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 1 | 1 | 11 |
| Pratt | 6 | 3 | 136 | 2 | 4 | 5 | 2 | 1 | 4 | 1 | 4 | 3 | 3 | 3 | 5 | 2 | 1 | 2 | 1 | 2 | 1 | 4 | 1 | 2 | 0 | 1 | 5 | 11 |
| Pratt | 6 | 2 | 137 | 1 | 3 | 1 | 1 | 1 | 2 | 2 | 4 | 2 | 3 | 3 | 4 | 4 | 1 | 3 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 3 | 3 |
| Pratt | 6 | 4 | 138 | 2 | 2 | 4 | 2 | 2 | 2 | 2 | 4 | 3 | 4 | 3 | 5 | 4 | 1 | 1 | 2 | 1 | 2 | 4 | 2 | 2 | 0 | 2 | 5 | 1 |
| Pratt | 6 | 4 | 139 | 2 | 1 | 3 | 1 | 1 | 4 | 1 | 0 | 2 | 4 | 5 | 3 | 4 | 1 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | 0 | 2 | 5 | 11 |
| Pratt | 6 | 4 | 140 | 1 | 4 | 2 | 1 | 1 | 4 | 1 | 0 | 3 | 4 | 5 | 5 | 3 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 5 | 5 | 11 |
| Pratt | 7 | 4 | 141 | 2 | 3 | 4 | 3 | 1 | 2 | 1 | 0 | 1 | 4 | 4 | 3 | 3 | 0 | 0 | 1 | 1 | 3 | 1 | 1 | 0 | 0 | 3 | 5 | 3 |
| Pratt | 7 | 4 | 142 | 2 | 3 | 1 | 2 | 2 | 1 | 2 | 3 | 3 | 3 | 4 | 2 | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 5 | 11 |
| Pratt | 7 | 4 | 143 | 1 | 3 | 1 | 2 | 1 | 2 | 1 | 0 | 3 | 5 | 4 | 5 | 0 | 2 | 0 | 1 | 1 | 1 | 4 | 2 | 2 | 0 | 2 | 5 | 5 |
| Pratt | 7 | 4 | 144 | 2 | 3 | 1 | 2 | 1 | 3 | 1 | 0 | 3 | 5 | 4 | 4 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 1 | 1 | 1 |
| Pratt | 7 | 4 | 145 | 2 | 1 | 3 | 1 | 1 | 4 | 1 | 0 | 3 | 5 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 2 | 2 | 3 | 1 | 2 | 11 |
| Pratt | 7 | 4 | 146 | 2 | 3 | 1 | 3 | 1 | 3 | 2 | 4 | 3 | 5 | 5 | 5 | 5 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 3 | 11 |
| Pratt | 7 | 4 | 147 | 1 | 1 | 3 | 1 | 1 | 4 | 1 | 0 | 3 | 4 | 4 | 4 | 0 | 0 | 0 | 3 | 1 | 1 | 4 | 1 | 2 | 0 | 1 | 2 | 11 |
| Pratt | 7 | 4 | 148 | 1 | 3 | 1 | 3 | 2 | 1 | 2 | 2 | 3 | 5 | 4 | 4 | 5 | 1 | 3 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 3 | 9 |
| Pratt | 7 | 4 | 149 | 1 | 2 | 1 | 1 | 2 | 4 | 2 | 4 | 3 | 2 | 4 | 1 | 4 | 1 | 2 | 1 | 1 | 1 | 4 | 2 | 2 | 0 | 2 | 4 | 2 |
| Pratt | 7 | 4 | 150 | 1 | 1 | 3 | 1 | 2 | 2 | 2 | 4 | 1 | 4 | 3 | 4 | 5 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 3 | 1 | 13 |
| Pratt | 7 | 4 | 151 | 2 | 1 | 3 | 1 | 2 | 2 | 2 | 4 | 1 | 4 | 2 | 3 | 5 | 1 | 3 | 1 | 3 | 0 | 1 | 1 | 2 | 0 | 3 | 1 | 13 |
| Pratt | 7 | 4 | 152 | 2 | 3 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 4 | 3 | 5 | 5 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 2 | 0 | 1 | 5 | 11 |

| STUDY AREA | DAY | TIME | SUBJECT | SEX | AGE | OCCU | EDUC | TOUR | | Q1 | Q2 | Q3 | Q4 | Q5 | ACTIVITIES | VIEW | FOOD | Q6 | WHERE | Q7 | Q8 | WHY | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pratt | 7 | 4 | 153 | 1 | 4 | 1 | 2 | 1 | | 2 | 1 | 4 | 3 | 5 | 4 | 5 | 4 | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 2 | 0 | 4 | 5 | 11 |
| Pratt | 7 | 4 | 154 | 2 | 2 | 1 | 2 | 2 | | 2 | 2 | 0 | 3 | 4 | 4 | 5 | 5 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 0 | 3 | 1 | 6 |
| Pratt | 6 | 3 | 155 | 1 | 3 | 1 | 3 | 1 | | 1 | 2 | 4 | 3 | 4 | 5 | 5 | 5 | 1 | 3 | 3 | 1 | 2 | 4 | 1 | 1 | 3 | 1 | 1 | 11 |
| Pratt | 6 | 3 | 156 | 2 | 3 | 1 | 2 | 2 | | 4 | 2 | 4 | 3 | 4 | 5 | 5 | 5 | 1 | 3 | 1 | 1 | 1 | 4 | 1 | 1 | 3 | 2 | 1 | 2 |
| Pratt | 5 | 3 | 157 | 1 | 3 | 1 | 2 | 2 | | 1 | 2 | 2 | 3 | 5 | 5 | 5 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 1 | 11 |
| Pratt | 6 | 3 | 158 | 2 | 2 | 3 | 3 | 2 | | 1 | 2 | 2 | 3 | 3 | 2 | 5 | 3 | 1 | 2 | 1 | 1 | 1 | 4 | 1 | 1 | 3 | 2 | 1 | 2 |
| Pratt | 6 | 3 | 159 | 2 | 2 | 3 | 3 | 2 | | 1 | 2 | 3 | 3 | 4 | 3 | 5 | 3 | 1 | 2 | 1 | 1 | 1 | 4 | 1 | 1 | 3 | 2 | 4 | 11 |
| Pratt | 6 | 3 | 160 | 1 | 3 | 2 | 2 | 2 | | 4 | 2 | 4 | 1 | 5 | 5 | 4 | 4 | 2 | 0 | 1 | 1 | 2 | 1 | 2 | 1 | 3 | 2 | 1 | 11 |
| Pratt | 6 | 3 | 161 | 2 | 3 | 1 | 1 | 2 | | 3 | 2 | 4 | 1 | 5 | 5 | 4 | 4 | 2 | 0 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | 1 | 11 |
| Pratt | 6 | 3 | 162 | 1 | 2 | 1 | 2 | 3 | | 1 | 2 | 2 | 1 | 2 | 3 | 5 | 4 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 4 | 2 | 1 | 11 |
| Pratt | 6 | 3 | 163 | 1 | 2 | 2 | 2 | 2 | | 3 | 2 | 4 | 3 | 5 | 5 | 5 | 5 | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 1 | 4 | 1 | 5 | 11 |
| Pratt | 6 | 3 | 164 | 2 | 2 | 1 | 2 | 2 | | 3 | 2 | 3 | 1 | 5 | 5 | 4 | 5 | 1 | 3 | 1 | 1 | 2 | 2 | 1 | 1 | 4 | 1 | 5 | 11 |
| Pratt | 6 | 3 | 165 | 2 | 2 | 1 | 2 | 1 | | 2 | 2 | 4 | 3 | 3 | 4 | 4 | 5 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 1 | 11 |
| Pratt | 6 | 3 | 166 | 1 | 2 | 2 | 2 | 1 | | 2 | 2 | 4 | 3 | 4 | 4 | 4 | 5 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 1 | 11 |
| Pratt | 6 | 1 | 167 | 1 | 3 | 2 | 2 | 2 | | 2 | 2 | 4 | 3 | 5 | 4 | 4 | 5 | 1 | 3 | 1 | 1 | 2 | 1 | 1 | 1 | 4 | 2 | 5 | 2 |
| Pratt | 6 | 1 | 168 | 1 | 3 | 5 | 1 | 2 | | 3 | 2 | 2 | 3 | 5 | 5 | 5 | 4 | 2 | 0 | 1 | 1 | 1 | 4 | 1 | 1 | 4 | 2 | 5 | 11 |
| Pratt | 6 | 1 | 169 | 1 | 3 | 1 | 2 | 2 | | 1 | 2 | 4 | 3 | 4 | 5 | 5 | 4 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 4 | 1 | 3 | 11 |
| Pratt | 6 | 1 | 170 | 2 | 3 | 1 | 2 | 2 | | 1 | 2 | 4 | 3 | 3 | 5 | 5 | 4 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 4 | 2 | 3 | 11 |
| Pratt | 6 | 1 | 171 | 2 | 4 | 1 | 1 | 3 | | 1 | 1 | 0 | 1 | 5 | 5 | 5 | 5 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 2 | 0 | 2 | 1 | 11 |
| Pratt | 6 | 1 | 172 | 1 | 3 | 2 | 1 | 2 | | 3 | 2 | 3 | 3 | 5 | 5 | 5 | 3 | 1 | 3 | 1 | 1 | 2 | 4 | 2 | 1 | 3 | 2 | 1 | 5 |
| Pratt | 6 | 1 | 173 | 2 | 3 | 1 | 1 | 2 | | 2 | 2 | 3 | 3 | 5 | 5 | 5 | 4 | 1 | 3 | 1 | 1 | 1 | 4 | 2 | 1 | 3 | 2 | 4 | 11 |
| Pratt | 6 | 2 | 174 | 2 | 3 | 1 | 2 | 1 | | 4 | 1 | 0 | 3 | 3 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 5 | 11 |
| Pratt | 6 | 2 | 175 | 2 | 3 | 1 | 2 | 1 | | 3 | 2 | 4 | 3 | 4 | 5 | 5 | 5 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 3 | 14 |
| Pratt | 6 | 2 | 176 | 2 | 3 | 1 | 2 | 1 | | 4 | 1 | 0 | 3 | 4 | 4 | 5 | 0 | 2 | 0 | 1 | 1 | 2 | 4 | 1 | 2 | 0 | 3 | 5 | 2 |
| Pratt | 6 | 2 | 177 | 2 | 3 | 1 | 3 | 1 | | 1 | 2 | 4 | 3 | 5 | 4 | 4 | 5 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 6 |
| Pratt | 6 | 2 | 178 | 2 | 4 | 5 | 3 | 2 | | 1 | 2 | 2 | 3 | 5 | 4 | 5 | 5 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 1 | 5 | 11 |
| Pratt | 6 | 2 | 179 | 2 | 2 | 3 | 1 | 1 | | 4 | 1 | 0 | 1 | 5 | 5 | 5 | 0 | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 2 | 0 | 3 | 5 | 11 |
| Pratt | 6 | 2 | 180 | 2 | 2 | 4 | 1 | 1 | | 4 | 1 | 0 | 1 | 5 | 5 | 5 | 0 | 1 | 1 | 3 | 1 | 2 | 4 | 1 | 2 | 0 | 3 | 5 | 11 |
| Pratt | 6 | 2 | 181 | 2 | 3 | 4 | 1 | 2 | | 4 | 2 | 4 | 3 | 4 | 5 | 5 | 4 | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 1 | 5 | 1 |
| Pratt | 6 | 2 | 182 | 1 | 4 | 1 | 1 | 2 | | 4 | 2 | 4 | 3 | 5 | 5 | 5 | 4 | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 3 | 2 | 1 |
| Pratt | 6 | 2 | 183 | 1 | 4 | 5 | 2 | 2 | | 3 | 2 | 3 | 3 | 4 | 5 | 5 | 5 | 1 | 3 | 1 | 1 | 2 | 1 | 1 | 1 | 4 | 2 | 5 | 1 |
| Pratt | 6 | 2 | 184 | 1 | 4 | 5 | 1 | 1 | | 3 | 1 | 0 | 3 | 5 | 5 | 5 | 3 | 1 | 3 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 5 | 1 |
| Pratt | 6 | 2 | 185 | 1 | 3 | 1 | 2 | 2 | | 4 | 2 | 4 | 3 | 4 | 5 | 5 | 4 | 1 | 3 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | 5 | 7 |
| Pratt | 6 | 2 | 186 | 1 | 3 | 5 | 2 | 1 | | 3 | 1 | 0 | 3 | 4 | 5 | 5 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 5 | 7 |
| Pratt | 5 | 2 | 187 | 1 | 2 | 1 | 2 | 3 | | 1 | 2 | 1 | 3 | 5 | 5 | 5 | 5 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 4 | 1 | 5 | 11 |
| Pratt | 5 | 2 | 188 | 1 | 2 | 1 | 2 | 3 | | 1 | 2 | 3 | 3 | 5 | 5 | 5 | 3 | 1 | 1 | 1 | 1 | 4 | 4 | 1 | 2 | 0 | 2 | 5 | 11 |
| Pratt | 5 | 2 | 189 | 1 | 3 | 1 | 2 | 3 | | 3 | 2 | 2 | 2 | 4 | 4 | 5 | 5 | 1 | 3 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | 1 | 11 |
| Pratt | 5 | 2 | 190 | 1 | 2 | 1 | 2 | 3 | | 3 | 2 | 1 | 3 | 5 | 3 | 4 | 5 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 2 | 0 | 2 | 5 | 11 |
| Pratt | 5 | 2 | 191 | 1 | 1 | 1 | 2 | 3 | | 3 | 2 | 2 | 3 | 5 | 4 | 5 | 3 | 2 | 0 | 1 | 1 | 2 | 4 | 1 | 2 | 0 | 2 | 5 | 11 |
| Pratt | 5 | 2 | 192 | 1 | 2 | 1 | 2 | 3 | | 4 | 2 | 3 | 3 | 5 | 5 | 5 | 5 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 4 | 2 | 5 | 11 |
| Pratt | 5 | 2 | 193 | 1 | 3 | 1 | 2 | 3 | | 4 | 2 | 3 | 3 | 5 | 4 | 5 | 3 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 4 | 1 | 5 | 11 |
| Pratt | 5 | 2 | 194 | 1 | 2 | 1 | 2 | 3 | | 3 | 2 | 2 | 3 | 5 | 5 | 5 | 5 | 1 | 3 | 1 | 1 | 4 | 4 | 1 | 1 | 3 | 1 | 1 | 11 |
| Pratt | 5 | 2 | 195 | 1 | 1 | 1 | 2 | 3 | | 4 | 1 | 0 | 3 | 5 | 3 | 5 | 4 | 1 | 2 | 1 | 1 | 4 | 4 | 1 | 2 | 0 | 2 | 5 | 11 |
| Pratt | 5 | 2 | 196 | 1 | 4 | 5 | 2 | 3 | | 3 | 2 | 1 | 3 | 5 | 5 | 5 | 5 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 5 | 11 |
| Pratt | 5 | 2 | 197 | 1 | 3 | 1 | 2 | 3 | | 1 | 2 | 3 | 2 | 5 | 5 | 4 | 4 | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 5 | 11 |
| Pratt | 5 | 3 | 198 | 1 | 2 | 1 | 2 | 3 | | 4 | 2 | 2 | 2 | 5 | 4 | 4 | 3 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 1 | 2 | 5 | 11 |
| Pratt | 5 | 3 | 199 | 1 | 1 | 1 | 1 | 2 | | 3 | 2 | 2 | 3 | 5 | 4 | 5 | 5 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 5 | 11 |
| Pratt | 5 | 3 | 200 | 1 | 2 | 1 | 3 | 2 | | 4 | 1 | 0 | 1 | 5 | 4 | 5 | 3 | 1 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | 0 | 2 | 5 | 11 |

# APPENDIX E

## Reflex Cross-Tab Results

Sheet 1 of 2

**Baltimore Inner Harbor--Urban Waterfront Study**
**Light/Pratt Pavilion Survey Results**

| | | STUDY AREA | | |
|---|---|---|---|---|
| | | Light | Pratt | ALL |
| TIME | 1 | 7 | 7 | 7 |
| | 2 | 33 | 26 | 29.5 |
| | 3 | 29 | 38 | 33.5 |
| | 4 | 31 | 29 | 30 |
| | ALL | 100 | 100 | 100 |

1 · (10-12)
2 · (12-2)
3 · (2-5)
4 · (6-8)

| | | STUDY AREA | | |
|---|---|---|---|---|
| | | Light | Pratt | ALL |
| DAY | 5 | 24 | 15 | 19.5 |
| | 6 | 75 | 41 | 58 |
| | 7 | 1 | 44 | 22.5 |
| | ALL | 100 | 100 | 100 |

5 · Friday
6 · Saturday
7 · Sunday

| | | STUDY AREA | | |
|---|---|---|---|---|
| | | Light | Pratt | ALL |
| SEX | 1 | 50 | 50 | 50 |
| | 2 | 50 | 50 | 50 |
| | ALL | 100 | 100 | 100 |

1 · Male
2 · Female

| | | STUDY AREA | | |
|---|---|---|---|---|
| | | Light | Pratt | ALL |
| AGE | 1 | 5 | 8 | 6.5 |
| | 2 | 45 58 | 34 | 39.5 |
| | 3 | 43 30 | 45 | 44 |
| | 4 | 7 | 13 | 10 |
| | ALL | 100 | 100 | 100 |

1 · (17-19)
2 · (20-30)
3 · (31-60)
4 · (60+)

| | | STUDY AREA | | |
|---|---|---|---|---|
| | | Light | Pratt | ALL |
| EDUCATION | 1 | 24 | 28 | 26 |
| | 2 | 67 | 59 | 63 |
| | 3 | 9 | 13 | 11 |
| | ALL | 100 | 100 | 100 |

1 · High School
2 · College
3 · Masters

| | | STUDY AREA | | |
|---|---|---|---|---|
| | | Light | Pratt | ALL |
| OCCUPATION | 1 | 75 | 62 | 68.5 |
| | 2 | 5 | 8 | 6.5 |
| | 3 | 13 | 15 | 14 |
| | 4 | 4 | 4 | 4 |
| | 5 | 3 | 11 | 7 |
| | ALL | 100 | 100 | 100 |

1 · White Collar
2 · Blue Collar
3 · Student
4 · Housewife
5 · Retired

| | | STUDY AREA | | |
|---|---|---|---|---|
| | | Light | Pratt | ALL |
| TOURIST | 1 | 27 | 38 | 32.5 |
| | 2 | 59 | 48 | 53.5 |
| | 3 | 14 | 14 | 14 |
| | ALL | 100 | 100 | 100 |

1 · Tourist
2 · Resident
3 · Worker

| | | STUDY AREA | | |
|---|---|---|---|---|
| | | Light | Pratt | ALL |
| Q1 WHY CAME | 1 | 28 | 18 | 23 |
| | 2 | 6 | 18 | 12 |
| | 3 | 27 | 27 | 27 |
| | 4 | 39 | 37 | 38 |
| | ALL | 100 | 100 | 100 |

1 · Nearby Destination
2 · On-Site Bldg
3 · On-Site Activity
4 · Waterfront Atmosphere

| | | STUDY AREA | | |
|---|---|---|---|---|
| | | Light | Pratt | ALL |
| Q2 FIRST TIME HERE | 1 | 25 | 25 | 25 |
| | 2 | 75 | 75 | 75 |
| | ALL | 100 | 100 | 100 |

1 · Yes
2 · No

| | | STUDY AREA | | |
|---|---|---|---|---|
| | | Light | Pratt | ALL |
| Q3 HOW OFTEN COME | 0 | 22 | 24 | 23 |
| | 1 | 8 | 4 | 6 |
| | 2 | 15 | 16 | 15.5 |
| | 3 | 21 | 15 | 18 |
| | 4 | 34 | 41 | 37.5 |
| | ALL | 100 | 100 | 100 |

0 · N/A
1 · Daily
2 · Weekly
3 · Monthly
4 · Several Times/Year

| | | STUDY AREA | | |
|---|---|---|---|---|
| | | Light | Pratt | ALL |
| Q4 COME IF NOT ON WATERFRONT | 1 | 10 | 15 | 12.5 |
| | 2 | 5 | 11 | 8 |
| | 3 | 79 | 73 | 76 |
| | 4 | 6 | 1 | 3.5 |
| | ALL | 100 | 100 | 100 |

1 · Yes
2 · Maybe
3 · No
4 · Don't Know

| | | STUDY AREA | | |
|---|---|---|---|---|
| | | Light | Pratt | ALL |
| Q5 SOCIAL ATMOSPHERE | 2 | 1 | 2 | 1.5 |
| | 3 | 28 | 12 | 20 |
| | 4 | 31 | 36 | 33.5 |
| | 5 | 40 | 50 | 45 |
| | ALL | 100 | 100 | 100 |

1 · Lowest Rating
2 ·
3 ·
4 ·
5 · Highest Rating

| | | STUDY AREA | | |
|---|---|---|---|---|
| | | Light | Pratt | ALL |
| ACTIVITIES | 0 | 0 | 1 | 0.5 |
| | 1 | 2 | 1 | 1.5 |
| | 2 | 3 | 3 | 3 |
| | 3 | 23 | 13 | 18 |
| | 4 | 41 | 39 | 40 |
| | 5 | 31 | 43 | 37 |
| | ALL | 100 | 100 | 100 |

0 · N/A
1 · Lowest Rating
2 ·
3 ·
4 ·
5 · Highest Rating

| | | STUDY AREA | | |
|---|---|---|---|---|
| | | Light | Pratt | ALL |
| VIEW | 1 | 0 | 1 | 0.5 |
| | 2 | 1 | 2 | 1.5 |
| | 3 | 8 | 7 | 7.5 |
| | 4 | 36 | 25 | 30.5 |
| | 5 | 55 | 65 | 60 |
| | ALL | 100 | 100 | 100 |

1 · Lowest Rating
2 ·
3 ·
4 ·
5 · Highest Rating

| | | STUDY AREA | | |
|---|---|---|---|---|
| | | Light | Pratt | ALL |
| FOOD | 0 | 0 | 7 | 3.5 |
| | 1 | 1 | 1 | 1 |
| | 2 | 3 | 4 | 3.5 |
| | 3 | 14 | 15 | 14.5 |
| | 4 | 33 | 26 | 29.5 |
| | 5 | 49 | 47 | 48 |
| | ALL | 100 | 100 | 100 |

0 · N/A
1 · Lowest Rating
2 ·
3 ·
4 ·
5 · Highest Rating

Baltimore Inner Harbor--Urban Waterfront Study
Light/Pratt Pavilion Survey Results

sheet 2 of 2

Q6 EAT HERE

STUDY AREA

| | Light | Pratt | ALL |
|---|---|---|---|
| 0 | 0 | 4 | 2 |
| 1 | 95 | 88 | 91.5 |
| 2 | 5 | 8 | 6.5 |
| ALL | 100 | 100 | 100 |

0 · N/A
1 · Yes
2 · No

WHERE

STUDY AREA

| | Light | Pratt | ALL |
|---|---|---|---|
| 0 | 5 | 12 | 8.5 |
| 1 | 28 | 31 | 29.5 |
| 2 | 43 | 27 | 35 |
| 3 | 24 | 30 | 27 |
| ALL | 100 | 100 | 100 |

0 · N/A
1 · Restaurant
2 · Food Court
3 · Both Rest. & Court

Q7 SIT AND WATCH

STUDY AREA

| | Light | Pratt | ALL |
|---|---|---|---|
| 1 | 97 | 93 | 95 |
| 2 | 1 | 3 | 2 |
| 3 | 2 | 4 | 3 |
| ALL | 100 | 100 | 100 |

1· Yes
2· No
3· Maybe

Q8 COMFORT

STUDY AREA

| | Light | Pratt | ALL |
|---|---|---|---|
| 1 | 90 | 96 | 93 |
| 2 | 9 | 3 | 6 |
| 3 | 1 | 1 | 1 |
| ALL | 100 | 100 | 100 |

1· Yes
2· No
3· Don't know

WHY

STUDY AREA

| | Light | Pratt | ALL |
|---|---|---|---|
| 1 | 31 | 31 | 31 |
| 2 | 59 | 59 | 59 |
| 3 | 4 | 1 | 2.5 |
| 4 | 6 | 9 | 7.5 |
| ALL | 100 | 100 | 100 |

1· Safety/Security
2· Friendly Atmosphere
3· Easy Accesibility
4· No Response

Q9 CHAIRS OR EDGE OF WATER

STUDY AREA

| | Light | Pratt | ALL |
|---|---|---|---|
| 1 | 38 | 50 | 44 |
| 2 | 12 | 11 | 11.5 |
| 3 | 1 | 0 | 0.5 |
| 4 | 49 | 39 | 44 |
| ALL | 100 | 100 | 100 |

1· Chairs
2· Water
3· Don't know
4· Both

Q10 SAFE WITHOUT HANDRAIL

STUDY AREA

| | Light | Pratt | ALL |
|---|---|---|---|
| 1 | 91 | 87 | 89 |
| 2 | 7 | 12 | 9.5 |
| 3 | 2 | 0 | 1 |
| 4 | 0 | 1 | 0.5 |
| ALL | 100 | 100 | 100 |

1· Yes
2· No
3· Don't know
4· N/A

Q11 BEEN AT NIGHT

STUDY AREA

| | Light | Pratt | ALL |
|---|---|---|---|
| 0 | 0 | 1 | 0.5 |
| 1 | 64 | 59 | 61.5 |
| 2 | 36 | 40 | 38 |
| ALL | 100 | 100 | 100 |

0· N/A
1· Yes
2· No

Q12 WHAT ENJOY ST VISIT

STUDY AREA

| | Light | Pratt | ALL |
|---|---|---|---|
| 0 | 35 | 38 | 36.5 |
| 1 | 6 | 6 | 6 |
| 2 | 7 | 4 | 5.5 |
| 3 | 40 | 36 | 38 |
| 4 | 12 | 16 | 14 |
| ALL | 100 | 100 | 100 |

0· N/A
1· Shops
2: Restaurants
3· Atmosphere
4· All the Above

Q13 ENJOY MOST

STUDY AREA

| | Light | Pratt | ALL |
|---|---|---|---|
| 1 | 41 | 36 | 38.5 |
| 2 | 53 | 53 | 53 |
| 3 | 4 | 9 | 6.5 |
| 4 | 1 | 1 | 1 |
| 5 | 1 | 1 | 1 |
| ALL | 100 | 100 | 100 |

1· On-site Activity
2· Waterfront Atmosphere
3· On-site Bldgs.
4· Easy Accessibility
5· No response

Q14 ENJOY LEAST

STUDY AREA

| | Light | Pratt | ALL |
|---|---|---|---|
| 1 | 33 | 26 | 29.5 |
| 2 | 12 | 8 | 10 |
| 3 | 10 | 7 | 8.5 |
| 4 | 3 | 4 | 3.5 |
| 5 | 42 | 55 | 48.5 |
| ALL | 100 | 100 | 100 |

1· Crowded Atmosphere
2· Quality of Phys. Envir.
3· Access to Activities
4· Quality of Service
5· No Response/NA

Q15 SUGGESTIONS

STUDY AREA

| | Light | Pratt | ALL |
|---|---|---|---|
| 1 | 20 | 17 | 18.5 |
| 2 | 3 | 6 | 4.5 |
| 3 | 19 | 11 | 15 |
| 4 | 9 | 3 | 6 |
| 5 | 49 | 63 | 56 |
| ALL | 100 | 100 | 100 |

1· Improve Lands. Envir.
2· Improve Safety
3· Improve Activities
4· Improve Accessibility
5· No Response

# AN EVALUATION OF DESIGN FOR SOCIABILITY IN THE URBAN WATERFRONT CONTEXT:

## A CASE STUDY OF THE BALTIMORE INNER HARBOR

by

BRENDA JOSEPHINE OCANDO

B.G.S., University of Maryland, 1981

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AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF LANDSCAPE ARCHITECTURE

Department of Landscape Architecture

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1988

# ABSTRACT

The purpose of this research is to utilize William Whyte's classic study on sociability in small urban plazas to analyze the design factor of sociability in an urban waterfront context, specifically Baltimore's Harborplace. While Whyte's evaluation method was based on direct observation of people in the urban plaza, this study, which took place in the summer of 1987, utilizes 1) case study analysis, 2) direct observation, including instruments such as photography and behavior mapping, and 3) interview questionnaires. The results of this research demonstrate the important relationship between design for outdoor sociability in the urban waterfront and the value therefore of using sociability as a design factor in such design situations.